Annexes

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Annex 1

List of Wadden Sea fish species.
List of Wadden Sea fish species

compiled by Ralf Vorberg

Main tasks of the TMAP ad-hoc working group fish are the development of targets and assessment tools for trilateral Wadden Sea fish. A possible target could be "presence of a typical Wadden Sea fish fauna". As a provisional assessment tool a priority list of Wadden Sea fish species was defined, using data from the existing demersal and pelagic fish surveys. Another tool could be the definition of a range for species composition and/or species abundances. For this purposes a comprehensive compilation of fish species occurring in the Wadden Sea turned out to be useful.

Information derived from running monitoring programmes as the 30-year data sets of the demersal (young) fish survey, DFS and DYFS as listed in table, in the Netherlands and Germany and of the stow net fishery in Schleswig-Holstein, Lower Saxony and from the river Elbe. In addition species lists from the literature were used (Zijlstra et al., 1979; Fricke et al., 1994; Vorberg & Breckling, 1999).

The compilation of Wadden Sea fish species yielded a total of 149 proofs, of which 13 are freshwater species. The total number of North Sea fish species at the moment is 189 (Fröse & Pauly 2007), what means that about 72% of all North Sea fish species (can) occur in the Wadden Sea. With regard to a trilateral monitoring and assessment program only one half of all species is of practical importance: 50 species (33,6%) are common, 25 species (16,8%) are fairly common. 74 species (49,7%) have to be regarded as rare or even extremely rare in the Wadden Sea.

Literature


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# Annex 1 List of Wadden Sea fish species

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<td>Grote Zeenaald</td>
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Annex 2

List of Wadden Sea bird species.
List of Wadden Sea bird species

The table below indicates the birds species monitored in the trilateral Joint Monitoring of Migratory/Breeding Birds program to the EU Birds Directive.

Bird species are listed
a) according EU Birds Directive Annex I/II in Special Protection Areas (SPA) of the Wadden Sea in Denmark, Schleswig-Holstein, Hamburg, Niedersachsen and The Netherlands and b) in the trilateral "Joint Monitoring of Migratory Birds" (JMMB) and "Joint Monitoring of Breeding Birds" (JMBB) program

Remark:
B,M,BM - bird linked as "Breeding", "Migratory" or as "Breeding and Migratory" bird to SPA.
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Annex 3

List of endemic salt marsh species.
List of endemic saltmarsh species

The table below lists 271 endemic species in the saltmarshes of the nominated property. A selection of a bibliography in English language with regard to the endemites is given for further information.


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Diptera - Nematocera

Cecidomyiidae  Mayetiola puccinelliae MEYER, 1980 hal-1
Cecidomyiidae  Procystiphora gerardii MEYER, 1980 hal-1
Cecidomyiidae  Rhopalomyia florum (KIEFFER, 1890) hal-1
Limoniidae  Symplecta hybrida (Meigen) hal-2
Limoniidae  Symplecta stictica (Meigen) hal-1-2

Diptera - Brachycera

Agromyzidae  Amauromyza luteiceps (HENDEL, 1920) hal-1
Agromyzidae  Cerodontha fasciata (STROBL, 1880) hal-1
Agromyzidae  Cerodontha suturalis (HENDEL, 1931) hal-1
Agromyzidae  Chromatomyia asteris (= Phytomyza) (HENDEL, 1934) hal-1
Agromyzidae  Liriomyza angulicornis (MALLOCH, 1918) hal-1
Agromyzidae  Liriomyza cicerina (RONDANI, 1875) hal-2
Agromyzidae  Liriomyza gudmanni HERING, 1928 hal-1
Agromyzidae  Liriomyza latipalpis HENDEL, 1920 hal-1
Agromyzidae  Melanagromyza tripolii SPENCER, 1957 hal-1
Agromyzidae  Metopomyza junci VON TSCHIRNHAUS, 1981 hal-1
Agromyzidae  Napomyza maritima VON TSCHIRNHAUS, 1981 hal-1
Agromyzidae  Napomyza tripolii SPENCER, 1966 hal-1
Agromyzidae  Ophiomyia ononidis SPENCER, 1966 hal-2
Agromyzidae  Phytomyza euphrasiae KALTENBACH, 1860 hal-2
Agromyzidae  Phytomyza isais HERING, 1936 hal-2
Agromyzidae  Phytomyza plantaginis ROBIN.-DESVOIDY, 1851 hal-1
Anthomyiidae  Pegomya betaee atriplicis (CURTIS, 1847) hal-1
Chloropidae  Aphanotrigonum fasciellum (ZETTERSTEDT, 1855) hal-1
Chloropidae  Aphanotrigonum femorium COLLIN, 1946 hal-1
Chloropidae  Aphanotrigonum femorium COLLIN, 1946 hal-1
Chloropidae  Chlorops calceatus MEIGEN, 1830 hal-1
Chloropidae  Dicraeus fennicus DUDA, 1933 hal-1
Chloropidae  Elachiptera cornuta (FALLÉN, 1820) hal-1
Chloropidae  Eribolus slesvicensis BECKER, 1910 hal-1
Chloropidae  Eurina lurida MEIGEN, 1830 hal-1
Chloropidae  Incertella (= Tropidoscinis) junci n.sp. VON TSCHIRNHAUS, 1981 hal-1
Diptera-Brachycera Chloropidae Incertella (= Tropidoscinis) triglochinidis n.sp. VON TSCHIRNHAUS, 1981 hal-1
Diptera-Brachycera Chloropidae Melanum laterale (HALIDAY, 1833) hal-1
Diptera-Brachycera Chloropidae Meromyza nigriventris MACQUART, 1835 hal-2
Diptera-Brachycera Chloropidae Meromyza puccinelliae n.sp. VON TSCHIRNHAUS, 1981 hal-1
Diptera-Brachycera Chloropidae Microcercis (= Tropidoscinis) zuercheri (DUDA, 1933) hal-1
Diptera-Brachycera Chloropidae Microcercis trigonella (= Oscinella) (DUDA, 1933) hal-1
Diptera-Brachycera Chloropidae Oscinimorpha alibsetosa (DUDA, 1932) hal-1
Diptera-Brachycera Chloropidae Oscinimorpha alibsetosa (DUDA, 1932) hal-1
Diptera-Brachycera Chloropidae Pseudopachychaeta approximatonervis (ZETTERSTEDT, 1848) hal-1
Diptera-Brachycera Dolichopodidae Asyndetus longicornis Negrobov, 1973 hal-1
Diptera-Brachycera Dolichopodidae Campsicnemus armatus (Zetterstedt, 1849) hal-2
Diptera-Brachycera Dolichopodidae Campsicnemus magius (Loew, 1845) hal-1
Diptera-Brachycera Dolichopodidae Dolichopus clavipes Haliday, 1832 hal-1
Diptera-Brachycera Dolichopodidae Dolichopus diadema Haliday, 1832 hal-1
Diptera-Brachycera Dolichopodidae Dolichopus latipennis Fallén, 1823 hal-2
Diptera-Brachycera Dolichopodidae Dolichopus plumipes (Scopoli, 1763) hal-2-3
Diptera-Brachycera Dolichopodidae Dolichopus sabinus Haliday, 1838 hal-1
Diptera-Brachycera Dolichopodidae Dolichopus signifer Haliday, 1838 hal-2
Diptera-Brachycera Dolichopodidae Dolichopus strigipes Verrall, 1875 hal-2
Diptera-Brachycera Dolichopodidae Hydrophorus oceanus (Macquart, 1838) hal-1
Diptera-Brachycera Dolichopodidae Hydrophorus praecox (Lehmann, 1822) hal-2
Diptera-Brachycera Dolichopodidae Machaerium maritimaes Haliday, 1832 hal-1
Diptera-Brachycera Dolichopodidae Medetera micacea Loew, 1857 hal-2-3
Diptera-Brachycera Dolichopodidae Melanostolus nigrillicius (Loew, 1871) hal-2
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Annex 4

Annex 5

The Wadden Sea 2010

The Wadden Sea – A Universally Outstanding Tidal Wetland

Foreword

The designation of the Dutch and German parts of the Wadden Sea Conservation Area as a World Heritage Site by UNESCO in June 2009 was a major step in formally recognizing the global importance of the Wadden Sea as a nature area. As such, it is managed through a joint effort of Denmark, Germany and The Netherlands. Therefore, the QSR Synthesis Report 2010 is preceded by a summary report of the universally outstanding and most significant natural values. This is based on the nomination dossier and is here extended to cover the entire Wadden Sea.

In this Trilateral Wadden Sea Cooperation, the Trilateral Monitoring and Assessment Program (TMAP) plays a central role, providing the basis for a periodic assessment of the condition of the Wadden Sea ecosystem, and for an evaluation of progress towards the ecological targets set out in the Wadden Sea Plan.

This Quality Status Report 2009 (QSR 2009) was prepared to update the findings of the QSR 2004 and to provide input into the Trilateral Governmental Conference on Sylt on 18 March 2010. The work was coordinated by the Common Wadden Sea Secretariat and the Trilateral Monitoring and Assessment Group. Over 115 scientists from The Netherlands, Germany and Denmark contributed to this project during 2008-2009. They prepared 30 thematic reports which were published in November 2009 (http://www.waddensea-secretariat.org/QSR-2009/index.htm).

These thematic reports, together with findings from the 12th International Wadden Sea Symposium (Wilhelmshaven, 30 March – 3 April 2009) (Wadden Sea Ecosystem No. 26) provide the basis for the QSR synthesis report presented here. It summarizes the main findings of the QSR thematic reports and attempts to present an integrated assessment of the main ecosystem developments and identify main issues of concern and gaps of knowledge for science, management and policy.

Common Wadden Sea Secretariat
The Wadden Sea 2010

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The Wadden Sea – A Universally Outstanding Tidal Wetland

Karsten Reise
Martin Baptist
Peter Burbridge
Norbert Dankers
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2010
Common Wadden Sea Secretariat
Along the North Sea shore, the largest coherent tidal flat area of the temperate world has evolved. Sediment supply from the sea has sufficiently balanced a slow sea-level rise in the last 8,000 years to maintain a coastal configuration of a seaward sandy barrier, extensive tidal flats and episodically flooded marshes. The Wadden Sea is unique in that it consists of vast (4,700 km²) bare sand and mud flats, emerging twice daily at low tide. Oceanic waters dominate river influence, and dynamic sandy shoals and dune islands provide a partial shelter against waves and winds of a rough sea. In the course of a year, the Wadden Sea is visited by an unparalleled 10–12 million birds for foraging and resting on their East Atlantic flyway. Food provision in the form of tidal flat fauna is 10–20 times higher than in adjacent deeper waters. When the tide is in, the flats serve as a rich nursery for shrimp and fish. The Wadden Sea constitutes a gigantic biological filter between land and sea. This filter is primarily composed (1) of extensive beds of molluscan suspension feeders which filter the local tidal volume about twice a month, (2) of sediment kept permeable by bioturbating lugworms, and (3) of marsh vegetation which functions as a filter during episodic storm surges when waters are loaded with re-suspended fine particles. An impressive number of about 10,000 species of plants, fungi and animals thrive in the Wadden Sea. After a long phase of over-exploitation, protection measures have triggered spectacular recoveries in breeding birds and seals. Large-scale land claims have ceased and the Wadden Sea is today highly rated for its serene beauty. Global warming with an accelerating sea-level rise, however, may threaten the sandy barrier and the extent of the tidal flats.
The earliest and most famous historical testimony of the Wadden Sea is recorded in the 'Historia Naturalis' by Plinius the Elder who visited the southern coast of the North Sea in the year 47 AD. He was amazed by the ‘indistinctness’ and ‘immeasurable expanse’ of land inundated by the sea twice daily. The intimate bond between the people and this changeable environment was quite incomprehensible to him. However, perception of pleasure was derived from the Wadden Sea when in the 18-19th centuries the ‘aesthetics of the sublime’ stimulated human senses to ascribe outstanding value to this serene coastal sea with land diving under water and water running off the land, with an open horizon and limitless sky, and a calm sea which may all of a sudden turn wild with an arising torrential storm (Fischer and Hasse, 2001).

The Wadden Sea is mostly shallow enough to wade across. The unique vastness of the tidal flats and shoals, fringing salt marshes, wide beaches and dune islands with a spectacular abundance of wildlife has been the motivation for proposing the Wadden Sea as a UNESCO World Heritage Site. The following text is condensed from the description and justification chapters of the Dutch-German nomination dossier (CWSS, 2008, 2009), but here extended to cover the entire Wadden Sea area including the Danish part. The foremost question was: On which universally outstanding, most significant natural values should the inscription be based? We have employed major reviews of scientific knowledge (Wolff 1983), quality assessments (CWSS, 1991; De Jong, 1999; Essink et al., 2005; Marencic & de Vlas, 2009), and cite representative studies on the geomorphology, ecology and biology of the region from the 19th century onwards. Comparisons with other coasts of the world are based on Reineck and Singh (1980), Flemming (2002), Reise (2001) and own surveys (see annex 3 in CWSS, 2008). The purpose of this paper is to provide a concise overview on physical and biotic values which lend the Wadden Sea a universally outstanding status worthy for inscription as UNESCO World Heritage Site.

Figure 1: Satellite images taken in 2000-2002 and combined to show low tide conditions everywhere. In reality tidal waves progress counter-clockwise over a six-hour period through the Wadden Sea (Source: Eurimage, Common Wadden Sea Secretariat & Brockmann Consult). Arrows indicate boundaries between sub-regions. Inset shows tidal basins in the Northern Wadden Sea (modified from CPSL, 2005).
The Wadden Sea has the world's largest continuous belt of bare tidal flats partially sheltered by a sandy barrier against a rough sea, with the latter's waters dominating river influence. When post-glacial sea level rise began to slow down about 8,000 years ago, the Wadden Sea emerged with a seaward barrier of dune islands and sandy shoals, and a landward area of tidal flats and salt marshes (Zagwijn, 1986; Flemming and Davis, 1994). The rates of sea-level rise and sediment supply varied over time and locality, causing continuous dynamics in the coastal morphology of the Wadden Sea. As a result, at times parts of the coast have grown where the sea tides and waves have washed in more sediment from the adjacent offshore zone than was needed to compensate for sea level rise. At other times, the coast retreated in some places when sediment supply has been unable to compensate for sea level rise. In this way, the Holocene history of sea level, climate, and depositional responses has been preserved in the stratigraphic record of the Wadden Sea (Streif, 1989; Bartholdy and Pejrup, 1994; Behre, 2003).

With the Wadden Sea, a universally outstanding coastal landscape has arisen at the southern and eastern shores of the North Sea (Figure 1). Along a coastal stretch of approximately 500 km, an uninterrupted belt of sand and mud flats with a total area of 4,700 km² is exposed to the air and then covered by water twice daily in the rhythm of the tides. This belt of tidal flats is dissected by more than 30 branching tidal inlets and five major estuaries. Such a vast and coherent intertidal area not covered by salt marsh vegetation is found nowhere else in the world.

There are many other sedimentary coasts which, in one way or another, resemble the Wadden Sea morphologically but are much smaller or differ in terms of climate, river influence, tides or waves. Other large tidal flats can be found in the Arctic, but there the tides tend to be smaller than in the Wadden Sea, and the shore is frozen and covered by ice most of the year. In tropical and subtropical climates, the tidal zone is often occupied by mangroves, whereas in the Wadden Sea tidal flats lack upright growing plants, except for salt marsh vegetation above mean high-tide level. On other coasts, most of the sediment is directly supplied from the hinterland by rivers, and salinity is usually low or variable. Examples of such coasts are the Arctic Lena Delta, the temperate Mississippi Delta or tropical deltaic regions of the Amazon, Niger or Ganges. Also, the wide mud flats along the coasts of the Yellow Sea have been built up by rivers.

The Wadden Sea is special in that almost all of the sediments are supplied from the adjacent sea with only a minor or local river influence (Arends, 1833; van Straaten and Kuenen, 1957). Salinity ranges mostly between 20 and 30 psu, which is less than in the open ocean (34) but more than in estuaries (0–20), where most other intertidal flats are found in Europe. Large sand and mud flats occur along the NW African coast where the Banc d'Arguin covers an area of 630 km² and which corresponds to 13% of the tidal flat area of the Wadden Sea (Wolff et al., 1993). These tidal flats constitute a relic from a former river delta, and are intimately linked to the Wadden Sea by its wading birds overwintering there (Wymenga et al., 1990). The Wadden Sea comprises about 60% of the intertidal area at the north-eastern Atlantic shores.

A further feature of the Wadden Sea is a seaward barrier of sandy islands and shoals which is a consequence of moderate tidal ranges, and sand having been supplied from the offshore by waves and subsequently moved by the wind (Oost and de Boer, 1994). Tides have increased with the rising level of the sea and today span from 1.5 to 4 m. Below a tidal range of about 0.5 m, unbroken barrier spits and lagoons develop and above about 3.5 m barrier islands no longer occur due to the large tidal prisms. The Wadden Sea may be divided into three morphological sub-regions (see arrows in Figure 1), based on tidal ranges between 1.5 to 3 m in the South and North, and >3 m in the central part, as well as on coastal orientation and river influence:

- In the Southern Wadden Sea, twelve major barrier islands located 5 to 15 km off the mainland shore, shelter the tidal area against waves generated by northwesterly and northerly winds. Sediment imported from the sea does not fully compensate for sea-level rise and islands migrate landwards. A large embayment, the former brackish Zuiderzee (3,600 km²), was part of the Southern Wadden Sea until it was separated by a dam in 1932. It was subsequently converted into a freshwater lake and arable land. Another embayment, the estuarine Dollard, still exists.

- In the Central Wadden Sea, tidal ranges often exceed 3 m and there are four estuaries causing a lower and more variable salinity than in the other two regions. A seaward chain of barrier islands is absent. Here, sediment import seems to balance sea-level rise. With the Jadebusen, a large embayment extends deep into the low-lying coastal marshland.
• In the Northern Wadden Sea, eight islands and elevated sand bars form a seaward barrier 5 to 25 km off the mainland. They provide shelter against waves generated by the prevailing westerly winds. Mostly, sediment supply does not compensate for sea-level rise, except for an oversupply between the islands of Rømø and Fanø. Several marsh islands are scattered across the tidal area. These are remnants of a coherent marshland which became drowned in late medieval times. In the North, some Pleistocene cliffs meet the sea.

A distinctive hydrological feature of the Wadden Sea is a series of tidal basins which are marine analogues to river catchments (Postma, 1954; Ehlers, 1988). However, flow direction alternates with the tides (see inset in Figure 1). The existence of tidal basins is interrelated with barrier islands and elevated sands. Between these, the tidal flow is compressed and scours deep tidal inlets with a mean flow of about 1 m s⁻¹. Behind the barrier islands, most inlets branch into major tidal channels which, in turn, branch into successively smaller tidal creeks or runnels in a recurrent fractal pattern. In the back-barrier area, flood waters of adjacent tidal inlets meet at tidal divides (watersheds) where currents tend to calm down (Figure 2). Other than in lagoons, tidal divides allow for a direct lateral connection between basins. Seaward of tidal inlets, ebb-delta shoals are formed. Here, ebb currents interact with waves and a long-shore current which runs from southwest towards northeast.

The sediment distribution along deltaic coasts is typically from coarse materials inshore to progressively finer sediments offshore. In the Wadden Sea, by contrast, the decrease in grain size is the other way round (van Straaten, 1954). This difference is caused by the sediment transport routes perpendicular to the shore running in opposite directions, with the source either rivers or the sea. Along tropical and subtropical coasts, tidal flats may also develop behind a barrier of coralline reefs. Here the sediment particles primarily consist of biogenic carbonates, whereas in the Wadden Sea siliclastic sediments prevail.

Strong hydraulic and aeolian dynamics are an important characteristic of the Wadden Sea region. Twice a day the tides move an average volume of 15 km³ of sea water through the tidal channels and inlets into the tidal basins where roughly the same volume remains at low tide, thus swelling up to some 30 km³ at high tide. A high exchange rate of tidal water masses secures the dominance of marine conditions in the back-barrier area (Postma, 1954). In the course of a tidal cycle, the sum of freshwater discharge is <1% of the tidal volume. The difference in tidal exchange between the phases of the moon amounts to only about 20% in the Wadden Sea. Instead, strong onshore winds may increase high tides up to 4 m above mean high tide. Strong offshore winds are less frequent and may push low tides down to 1.5 m below mean low tide level. Because of this asymmetry in wind speed and direction, tidal flats often remain submerged over several days due to prevailing westerly winds, whereas continuous emergence over several tidal cycles due to southerly or easterly winds is extremely rare (Weisse and Plüß, 2006). This contributes to the dominance of marine over terrestrial organisms in the tidal zone of the Wadden Sea.
Ecologically the Wadden Sea functions as a gigantic coastal filter of unique composition, and offers plenty of food to a rich aquatic nursery and to 10–12 million birds in the course of a year. The habitats of the Wadden Sea show in a fascinating way how physical forces and biological activities interact to generate conditions for life in a fragile balance. Along this coast physical forces are strong, biological activities high, and the basic materials are soft sediments and fluid waters. This combination makes the dynamic interactions between organisms and their environment readily apparent and attractive to study. Major habitats are arranged along an offshore–inshore gradient and from deep tidal inlets up to the highest dunes: an offshore belt seaward of the barrier islands, a tidal area with subtidal gullies and shoals, intertidal mud and sand, with seagrass meadows or mixed oyster and mussel beds, a few estuaries, salt marshes on islands and along the mainland coast, beaches and dunes mainly on the islands. These habitats are functionally interrelated and constitute a characteristic combination.

The offshore belt of the Wadden Sea is operationally defined as the zone seaward of the barrier islands and elevated outer sands, extending into the North Sea down to the −15 m depth contour. This belt has no tidal flats and drops off smoothly towards the open North Sea but does not fully comply with it in terms of the biota. There is a continuous exchange of both water and sediment with the tidal area. The sediment supply from the offshore belt is vital for the resilience of the coast when responding to changes in tidal area, sea level and to disturbances caused by storm surges (Flemming and Bartholomä, 1997). Phytoplankton blooms often start in this belt because turbidity is low enough for sufficient light and nutrient concentrations are high (Postma, 1954; van Beusekom and de Jonge, 2002). Through the tidal channels and inlets this offshore primary production reaches the inshore zoobenthos. In the offshore belt, autotrophic production prevails and in the tidal area, heterotrophic production is dominant. Also larvae of benthic fauna and fish drift from the offshore belt further inshore. Shrimp, fish, diving birds, seals and harbour porpoises readily commute between offshore and inshore zones (Bückmann, 1934; Wolff and Zijlstra, 1980). In severe winters, the offshore belt provides an important refuge for the survival of populations otherwise confined to the tidal area.

Within the tidal area, the subtidal shoals and gullies similarly serve as a refuge for the intertidal fauna when conditions turn harsh. The subtidal fringe and low intertidal zone are the primary sites for beds of suspension feeders, mussels and oysters in particular (Hagmeier and Kändler, 1927). Mussels are kept in bottom cultures and also occur naturally in mixed beds with oysters (Figure 3; Dankers and Zuidema, 1995; Nehls et al., 2006). A native subtidal oyster has been driven to extinction by over-exploitation, while the introduced Pacific oyster recently invaded the intertidal mussel beds.
Together with other suspension feeders, the entire volume of tidal waters is filtered within two weeks (Verwey, 1952). Mussels and oysters also stabilize the bottom and accrete fine sediments, accumulate large amounts of shell material, provide attachment for algae and sessile invertebrates, and shelter for mobile invertebrates and fish. This rich association served as a model for the community concept (biocoenosis) developed by Möbius (1877) with the assumption of balanced species interactions maintaining a community of organisms. This concept is still favoured in ecological textbooks.

Tidal elevation and sediment composition are two major determinants of benthic assemblages on the tidal flats (Thamdrup, 1935; Wohlenberg, 1937; Linke, 1939). Suspended fine particles, mostly comprising aggregates of mineral grains and organics, tend to accumulate on the landward side of the tidal flats (Postma, 1961; Dronkers, 1984). This general phenomenon was initially explained by van Straaten and Kuenen (1957) with a combination of settling lag and scour lag. The former is a time lag between the moment at which a decreasing current is no longer able to hold a particle in suspension and the moment at which this particle reaches the bottom. The latter is the time lag caused, among others, by the extracellular slime of the microalgal film on the bottom, binding settling particles so that stronger currents are required for re-suspension than the velocity at which deposition of the same particle had occurred. The vast tidal flats of the Wadden Sea serve as a primary example for this progressively shoreward-fining gradient in particle size.

The sediment surface is almost completely covered with microscopic algae and bacterial colonies. Some of these are mobile and once buried under new deposits, they crawl back to the surface. This behavior may generate a laminated structure of mud deposition until reworked by the occasional storm surges (Wohlenberg, 1953). Intertidal seagrass beds may also accumulate fine particles. However, most leaves are shed in autumn and then waves re-suspend the intermittent accretion. The most extensive seagrass meadows occur in the Northern Wadden Sea on approximately 10% of the tidal flat area, and these represent the largest intertidal seagrass beds in Europe (Figure 2; Reise and Kohlus, 2008).

A large proportion of the tidal flats of the Wadden Sea consist of wave-rippled sands. This habitat is maintained by the constant sediment reworking of lugworms (Figure 4). In analogy to Darwin who described the role of earthworms in the shaping of the landscape in England, lugworms shape the appearance of the tidal flats and the spatial relationship between mud and sand flats in the Wadden Sea. Their fecal mounds with coiled strings of sand are the most characteristic feature of the tidal flats in the Wadden Sea. The total population size may comprise about one billion worms and this is considered the largest
Lugworms recycle the upper layer of the sediment 10–20 times per year through their guts (Cadée, 1976) and prevent clogging of the interstices of sand with organic material (Volkenborn et al., 2007). They also irrigate their burrows with water from above and build up anoxic environment in otherwise anoxic sediment. This increases bacterial activity and the permeable sand functions as an effective filter for the tidal waters.

The impressive ecological productivity of the tidal flats comprises high bacterial remineralisation rates, strong import of suspended microalgae, and a generally high productivity at the bottom by microscopic algae instead of large plants (Cadée and Hegeman, 1974; Loebl et al., 2007). Together this constitutes a readily consumable food supply for a zoobenthos which builds up an exceptionally high biomass, dominated by molluscan suspension feeders, followed by deposit feeding worms and small snails (Beukema, 1976; Beukema et al., 2002; Asmus, 1987; Reise et al., 1994). These in turn provide plenty of food for small crabs, shrimp and fish which use the flats as a nursery when the tide is in (Smidt, 1951; Kuipers, 1977; Strasser, 2002), and for huge flocks of wading birds, gulls and ducks when the tide is out (Piersma, 1987; Scheiffarth and Nehls, 1997). These have the advantage of searching for prey on a very large intertidal area, with a fair chance of frequently encountering patches of a sufficient quality and quantity of accessible food. On the permanently submerged bottom of the North Sea, the zoomass is 10–20 times lower than on the tidal flats. This is why the Wadden Sea can feed 10–12 million coastal birds in the course of a year (Blew et al., 2005). Most of these are migrants along the East Atlantic flyway and use the Wadden Sea as their central staging area to replenish energy lost during breeding and long-distance flights (Figure 5). Thus, the Wadden Sea feeds birds which travel to many other coasts or fly further inland. Similarly, the tidal flat fauna offers food for young fish which as adults migrate into the open sea or into the rivers. Seals and harbour porpoises are at the top of the aquatic food web, and birds of prey represent a link to the terrestrial food web (Baird et al., 2004). A diverse assemblage of parasites hitchhikes on these trophic pathways (Thieltges et al., 2006).

The estuaries as tidally influenced transition zones between marine and riverine environments are not a dominant feature and are small in size relative to the marine parts of the Wadden Sea (Harten and Vollmers, 1978). This is in contrast to most other tidal areas in Europe and the world. Nevertheless, these estuaries supply the Wadden Sea with nutrients, are pathways for diadromous fish and add habitats of low and variable salinity.

Mangroves and salt marshes dominate tidal areas along most tropical and temperate sedimentary coasts of the world. However, in the Wadden Sea, climate is too cold for mangroves and salt...
marshes are relegated to high-tide level and the episodically flooded supratidal zone. Thus, bare tidal flats prevail. In contrast, the Georgia Bight, on the other side of the Atlantic, represents a geomorphologically similar coast with many tidal areas and seaward barriers of sandy islands over a length of 1,200 km. However, bare mud flats comprise only 300 km², whereas salt marshes occupy 4,200 km² (Dame et al., 2000). In the Wadden Sea this habitat ratio is reversed with tidal flats occupying 4,700 km² and salt marshes 400 km². The reason for this difference is still open to debate. The Georgia Bight is warmer than the Wadden Sea which may be of particular benefit for the cord grass which dominates the marsh there. On the other hand, and unlike the Wadden Sea, the rivers along the east coast of North America supply huge amounts of fine-grained sediments which are trapped in the cord grass meadows, allowing these to expand. In addition, mean wave height in the Wadden Sea is twice that of the back-barrier area in the Georgia Bight. This may also explain why salt marshes are relegated towards high-tide level in the Wadden Sea.

Beaches and dunes are found along many coasts. However, in the Wadden Sea, numerous sandy barrier islands are aligned along the coast like strings of pearls. Sand blown by prevailing westerly winds from dry parts of the beach is trapped by pioneer plants. In the Wadden Sea, the main dune generating species is a marram grass (*Ammophila arenaria*) which is able to grow upwards with the accumulating sand (Figure 6). It does not stabilize the sand sufficiently to prevent further aeolian transport. Along retreating shorelines, one dune may therefore overtop another. When a dune height of 20 m is exceeded, the characteristically strong winds of the North Sea region overrule the marram grass and bare migrant dunes arise (Priesmeier, 1970). Without marram grass, the barrier islands would presumably look very different. This can be inferred from observations made along the coast of Oregon in the northwest of North America. There, marram grass was originally absent. After it had been introduced, it quickly generated a high and permanent fore-dune barrier behind the beach where none had been before.

Figure 6: Dunes on Wadden Sea barrier islands are generated by an interplay between sand mobilizing wind and stabilizing marram grass (*Ammophila arenaria*) (Photo: K. Reise).
The Wadden Sea displays a complex matrix of habitats across environmental gradients of depth and salinity, height and dryness, exposure to hydrodynamics and winds, and substrates modified by organisms. These habitats occur in dynamic sequences in a highly repetitive pattern due to the long chain of islands and shoals, tidal basins and estuaries, and together accommodate a high diversity of aquatic and terrestrial species. The Wadden Sea has a long tradition of research on the composition of the regional flora and fauna (Wolff, 1983; Gerlach, 2004; Niedringshaus et al., 2008). It forms the habitat for about 2,700 species of marine origin and at least 5,100 semi-terrestrial and terrestrial species, mostly the flora and fauna of salt marshes and dunes on the islands (Table 1). Various unicellular groups and small metazoans such as terrestrial nematodes have not been included in the surveys. Adding these, we estimate that the Wadden Sea area is populated by about 10,000 taxa, not including bacteria and archaea.

Of the taxa recorded, phototrophic plants comprise about 2,300, macrofungi 1,300 and animals 4,200 species. With this impressive species richness the Wadden Sea helps to arrest the loss of coastal biodiversity in temperate coastal zones. Presumably a crucial factor for the high species richness is the repetitive sequences of dynamic habitats on a large scale. This is likely to reduce the risk of extinction. On a sandy beach and sand flat of the island of Sylt, extending 115 m between the high and low tide lines, altogether more than one million individuals have been examined and identified to species level. Most belong to the interstitial fauna, composed of metazoans small enough to move through the interstices of sand without having to push sand grains out of their way. In toto, 652 species have been recorded, and for 148 of them it is the type locality where they have been described for the first time (Armonies and Reise, 2000). Contrary to larger marine organisms, the hot spot of diversity for the interstitial fauna lies in the intertidal zone rather than at greater depth (Figure 7). Adding estimates for unicellular algae, the territories of almost 1,000 species are trespassed when walking from high to low tide line at that site. Nowhere else in the world has species richness of a beach been analysed in such detail.

An incredible number of small arthropod species live in the salt marshes, mainly insects and spiders (Heydemann 1981). The main primary producers, the vascular plants, comprise only 45 species. Directly feeding on these plants are 6 species of waterfowl and 400 species of insects. Another 500 species have been found to feed on dead plant material, algae and fungi. Predaceous arthropods comprise 245 and parasites 250 species. To this spectrum we may add about 100 species of birds feeding and resting in salt marshes. The sum of all these species is almost 1,600. To these terrestrial organisms some 500 species of aquatic, mostly marine invertebrates of the meiofauna, have to be added. Again, considering unicellular organisms not included in the surveys, the grand total is about 2,300 taxa which may dwell in salt marshes of the Wadden Sea. This compares well with the species richness encountered in European temperate forests. More species occur in salt marshes than in beaches and sand flats because the vegetation generates a more complex habitat.

Of the 140-plus species of fish recorded in the Wadden Sea, 20 spend their entire life in the tidal

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<th>Marine aquatic organisms</th>
<th>Terrestrial, semi-terrestrial and freshwater organisms</th>
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<tr>
<td>Vascular plants</td>
<td>2 Macrofungi (islands) 1,300</td>
</tr>
<tr>
<td>Macroalgae</td>
<td>80 Lichens (islands) 347</td>
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<tr>
<td>Pelagic microalgae</td>
<td>380 Mosses (islands) 338</td>
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<tr>
<td>Benthic microalgae</td>
<td>260 Vascular plants 900</td>
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<tr>
<td>Zooplankton</td>
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<tr>
<td>Benthic microfauna</td>
<td>1,200 Arthropods 2,000</td>
</tr>
<tr>
<td>Benthic macrofauna</td>
<td>400 Birds 176</td>
</tr>
<tr>
<td>Fish</td>
<td>149 Other vertebrates 40</td>
</tr>
<tr>
<td>Marine mammals</td>
<td>3 Man</td>
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Table 1: Overview of species richness in the Wadden Sea. In some groups, numbers have been estimated. Due to taxonomic uncertainties, not all species complexes have been analysed, and in terrestrial environments surveys on small soil fauna are incomplete. Rare visitors are left out. Most numbers are from lists of species in Wolff (1983).
A universally outstanding tidal wetland area. Plaice (*Pleuronectes platessa*) and sole (*Solea solea*) spawn in the North Sea and their pelagic eggs and larvae drift into the tidal area, metamorphose and settle on the mud flats. There they benefit from ample food and warm temperatures (Zijlstra, 1972). They leave the Wadden Sea as juveniles before their first winter. Also, juveniles of herring (*Clupea harengus*) and sprat (*Sprattus sprattus*) occur in big shoals, particularly at night. Several diadromous species spawn in the rivers and merely pass through the Wadden Sea. Whiting (*Merlangius merlangus*) and cod (*Gadus morrhua*) have open sea nurseries, but in late summer and autumn of some years juveniles make incursions into the Wadden Sea with dramatic effects on shrimp and small fish on which they prey (Jansen, 2002).

For coastal birds, the Wadden Sea is not only attractive because of the high availability of food. Some of the islands and high sands are without mammalian predators and human disturbance. Almost one million ground-breeding birds belonging to 31 species use these sites (Koffijberg et al., 2006). Of Eurasian spoonbill, avocet, gull-billed tern and sandwich tern more than 25% of the European populations breed in the Wadden Sea region. For 43 species, the Wadden Sea supports more than 1% of the flyway population, which is the criterion of the Ramsar Convention for identifying wetlands of international importance.
Of these, 4 are breeding in the Wadden Sea, 15 are only visiting during their seasonal migrations, and 24 do both. Almost the entire population of dark-bellied brent goose (*Branta b. bernicla*) and the entire European and West-Russian population of dunlin (*Calidris alpina*) use the Wadden Sea during periods of the annual cycle (Figure 8). An additional seven species are present with more than 50% and further 14 species with more than 10% of their flyway populations. In absolute numbers, it is estimated that dunlin reaches a seasonal maximum of 1.4 million, oystercatcher 582,000, black-headed gull 499,000, red knot 339,000 and wigeon 333,000. In late summer, almost all shelducks of Northern and Western Europe concentrate with about 200,000 birds for moulting in the least disturbed areas of the Wadden Sea (Blew *et al.*, 2005). Many birds use the Wadden Sea only briefly, others do so for several months and use the area to gain enough energy for further migration. Other species spend the whole winter in the area. Hence, the numbers actually using the area (10 to 12 million) are much higher than the total numbers present at any one moment. Nonetheless, the Wadden Sea is one of the most spectacular sites for coastal birds in the world.

Indigenous species of marine mammals in the Wadden Sea are common seal (*Phoca vitulina*), grey seal (*Halichoerus grypus*) and harbour porpoise (*Phocoena phocoena*). The Wadden Sea now sustains approximately 20% of the Northeast-Atlantic subspecies of common seal. Archaeological findings suggest that grey seals were the dominant seal species until medieval times and then vanished entirely. The cause was most probably the ease of hunting during whelping on the upper beaches. Recently grey seals have also started a comeback (Reijnders *et al.*, 1995). During the moulting season, 20,250 common seals and 1,900 grey seals resting on sand bars have been counted from the air in 2008. In the Northern Wadden Sea, female harbour porpoise with offspring are observed with a density of 1–2 individuals per km².
Humans have always been present in the Wadden Sea region. Hunting and fishing seem to have driven large animals such as grey whale, Dalmatian pelican, sturgeon and salmon to extinction (Wolff, 2000). These will not come back without active support. Bird and seal populations have strikingly recovered when protection measures became effective in the course of the 20th century, but there is still room for more. Almost a thousand years ago, embanking of salt marsh areas commenced and culminated in the 20th century when also mud flats and entire embayments were cut off from the Wadden Sea by seawalls. This reduced the extent of salt marshes and nearshore mud flats, and at the same time interfered with a further deposition of silt and clay where the tidal zone became narrower and hydrodynamic energy increased per unit area (Flemming and Bartholomä, 1997). These distortions of natural processes constitute a major challenge to habitat restorations along the mainland coast.

In the 1950s and 1960s, pollutants in Wadden Sea organisms reached very high levels and caused incidences of mass mortalities in Eider ducks and sandwich terns, and reduced reproduction rates in seals (Brouwer et al., 1989). Discharges of pollutants have decreased since then. Sublethal effects are hard to detect and persistent pollutants are still in the sediments. Nutrient loads in the rivers debouching into or near the Wadden Sea reached a maximum in the 1970s, but have declined since then. However, they are still 2-5 fold above pre-industrial values. Enhanced algal blooms have been observed in the past and, although somewhat decreased, have not ceased altogether (van Beusekom 2005; Philippart et al., 2007). The question will be, how low do we wish to go with the nutrient loads?

North Sea fish have for a long time been subject to strong fishery pressure (Holm, 2005). After large fish had disappeared, fisheries in the Wadden Sea focused on shellfish and shrimp. This has affected the benthos in general: native oysters have vanished, subtidal mussels are mostly confined to culture lots, and intertidal beds are intermittently strongly decimated, while catches of shrimp (Crangon crangon) have been sustained (Lotze, 2005). Industrial cockle fishery has recently been banned completely. There seems to be a large potential for fish and shellfish recovery but management efforts are still in their infancy.

At least 60 alien aquatic species have been unintentionally introduced by shipping or with imported oysters. The Pacific oyster (Crassostrea gigas) became extremely abundant on mussel beds and beyond (Figure 9). This species, and others...
2

introduced earlier, seem to particularly benefit from the current trend of warming (Nehring et al., 2009). Around the low-tide line, the epibenthic community is already dominated by alien species, giving rise to new functions and habitats. Preventative measures against further introductions are urgently needed.

In the long run, sea-level rise triggered by global warming is expected to exceed the adaptive capacity of the Wadden Sea. The rise could be of the order of 1 m until the end of this century (Rahmstorf, 2007). Along the mainland, seawalls prevent a landward shift of the tidal area in response to higher water levels, and sediment supply from the North Sea may not keep up with the speed of sea-level rise. A time lag in sediment transport from the offshore belt to the tidal area would result in the intertidal zone being drowned. As the tidal flats provide the core function and services of the Wadden Sea ecosystem, plans should be prepared on how to facilitate sediment supply from the North Sea into the tidal area, and how to trap suspended particles from the tidal waters even in embanked low marshes. This demands an innovative and interdisciplinary research agenda leading towards a strengthening of the regional identity in a changing world (Kabat et al., 2009).

Conclusions

As a universally outstanding combination of attributes, the Wadden Sea

(1) has the largest unbroken belt of bare intertidal mud and sand flats in the world,

• supplied with sediment primarily from the sea,

• and a long chain of barrier islands providing shelter to the tidal area behind,

• adapting to sea-level rise by vertical accretion and by retreat of the sandy barrier,

• being subject to relatively high waves and strong seasonal storm surges,

• with tides doubling the volume of water twice daily,

• and a strong dominance of oceanic waters over their riverine counterparts;

(2) functions as a gigantic coastal filter,

• composed of extensive molluscan beds,

• and the largest lugworm population in the world keeping sediments permeable,

• and salt marshes confined to areas near high-tide level, unable to encroach on the vast tidal flats;

(3) offers a wide food availability based on

• phytoplankton imported from an offshore belt and on benthic microalgae,

• both readily consumed by an abundant benthic fauna,

• which provides food to an aquatic nursery of shrimp, fish and seals,

• and food to 10–12 million birds in the course of a year;

(4) has a complex and repetitive habitat matrix

• with about 10,000 species of aquatic and terrestrial organisms,

• which is indispensable for 44 populations of 34 species of coastal birds,

• showing a recovery of bird and seal populations after centuries of exploitation,

• no longer threatened by land claim ambitions, and being protected by trilateral policy.

The Wadden Sea may thus be perceived as a coast of hope. Extraordinary flocks of coastal birds and abundant seals are indicative of a thriving tidal ecosystem in spite of a history of strong human impacts. Ongoing species introductions and climatic warming will inevitably change the species composition. Eventually, accelerating sea-level rise will threaten the large extent of the tidal flats. This will require nature protection and coastal defence agencies to join forces in a common management plan to maintain the natural values and at the same time to allow for a sustainable shared human use.

Acknowledgements

We are most grateful to the staff of the Common Wadden Sea Secretariat and the many civil servants of Dutch and German Nature Protection Agencies who have been involved in writing the nomination dossier and encouraged this manuscript.


Möbius, K., 1877. Die Auster und die Austernwirtschafft. Wiegen, Fehmarn, Germany.


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2010
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The Wadden Sea is subject to a comprehensive nature protection scheme on national and regional levels as well as to extensive protection and management arrangements between the countries in the framework of the Trilateral Wadden Sea Cooperation. Also, several European directives play a part (e.g., Natura 2000).

Significant new developments since the QSR 2004 are the designation of the Danish Wadden Sea as a National Park (2010), the adoption of a revised Wadden Sea Plan (2010) and the inscription by UNESCO of the Dutch and German parts of the Wadden Sea as a World Heritage Site (2009).

### 1.1 Trilateral Wadden Sea Cooperation

Since 1978, the Trilateral Wadden Sea Cooperation (TWSC) between Denmark, Germany and The Netherlands has been dealing with the joint protection of the Wadden Sea ecosystem. Central elements of the trilateral arrangements are the guiding principles, common management principles and the common targets upon which common policies and management have been agreed (Wadden Sea Plan, 2010). The Guiding Principle of the Trilateral Wadden Sea policy is "to achieve, as far as possible, a natural and sustainable ecosystem in which natural processes proceed in an undisturbed way". The Wadden Sea Plan, the policy and management plan for the Wadden Sea Area proper, which includes the central objectives and principles of the Wadden Sea Cooperation, was agreed at the 8th Trilateral Wadden Sea Conference at Stade in 1997. The Trilateral Monitoring and Assessment Program (TMAP), associated with the implementation of the Wadden Sea Plan, was launched on the same occasion.

The Wadden Sea Area covers about 14,700 km²; the Conservation Area is about 11,200 km² (Table 1.1).

### 1.2 World Heritage Site

In June 2009, the World Heritage Committee inscribed the Dutch and German parts of the Wadden Sea on the World Heritage List under natural criteria (viii) geomorphology, (ix) ecological and...
biological processes, and (x) biological diversity. The Committee also adopted a Statement of Outstanding Universal Value which, according to the Operational Guidelines, forms the basis for the future protection and management of the property (UNESCO, 2009).

1.3 International protection regimes

The European Union’s environmental legislation is of specific significance for the Wadden Sea and has increased in importance during the past two decades. The legislation is trans-boundary and, increasingly, covers all environmental policy areas. It also has direct implications for Member States’ legislation. Of the comprehensive list of environmental legislation, the Habitats, Birds (Natura 2000) and Water Framework Directives are the most relevant for the protection and sustainable use of the nominated property. The Marine Strategy Framework Directive is currently being implemented and will also be important for Wadden Sea policy.

Other relevant European Union legislation includes the Environmental Impact Assessment Directive and the Strategic Environmental Assessment Directive, which are of central importance for the assessment of the environmental impacts of policies, plans and concrete projects. Also, the recommendation of the European Parliament and the Council on Integrated Coastal Zone Management is of particular importance for the Wadden Sea, because it deals specifically with the interface of land and sea and management of conditions at that interface.

The Wadden Sea countries are contractual parties to several international agreements, conventions and treaties, in particular the Convention on Wetlands of International Importance [especially as waterfowl habitat] (Ramsar Convention), the Convention on Biological Diversity (CBD), the Convention on the Conservation of Migratory Species of Wild Animals (CMS, Bonn Convention) also comprising the Agreement on the Conservation of Seals in the Wadden Sea (Seal Agreement), the Agreement on the Conservation of African-Eurasian Waterbirds (AEWA) and the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS), the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention).

1.4 National protection regimes

In The Netherlands, the protection of the Dutch part of the Wadden Sea combines a unique national physical planning approach (the Key Planning Decision Wadden Sea (PKB)) with a designation under the Nature Conservation Act 1998, supported by additional designations.

In Germany, the Wadden Sea is protected as national parks established in 1985, 1986 and 1990 in Schleswig-Holstein, Niedersachsen and Hamburg respectively.

In Denmark, the revised Statutory Order for the Danish Nature and Wildlife Reserve was enacted in 1998. In 2008, the Danish parliament formally agreed to establish the Danish Wadden Sea National Park, which covers almost 146,000 ha. The national park was inaugurated in October 2010, together with the enactment of the Statutory Order.

A comprehensive overview of the national protection and management regimes is given in the QSR 2009 Thematic Report No. 1 “The Wadden Sea – Protection and Management”.
2. Human Activities and Impacts

The Trilateral Monitoring and Assessment Program (TMAP) has a predecessor which operated from 1966-1985. This was the International Wadden Sea Working Group, a private organization of Danish, Dutch and German Wadden Sea scientists who aimed at better protection of the Wadden Sea. In 1983 their collective knowledge was published in the three volumes of 'Ecology of the Wadden Sea' and in 1985 these 124 Wadden Sea scientists published a document 'The management of the Wadden Sea'. Because this private working group suffered from a shortage of money, only a Dutch version ('Het beheer van de Wadden') was actually printed. This little-known booklet contains a table in which the threats to the Wadden Sea system are listed and ranked according to the severity of the problem. The ranking is based on: 1) the speed of recovery after occurrence of a human impact, 2) the maximum geographical extent of the effects of an impact, 3) the frequency of the impact. In the following paragraphs these threats or impacts are listed and discussed in a sequence of decreasing impact, as defined in the 1985 document. So, the first human activities listed were supposed to have the largest (potential) impact on the Wadden Sea system. For better understanding some of the activities are brought under the same heading.

This ranked list of human activities illustrates very well the progress which has been made in 25 years of managing the Wadden Sea as a nature reserve. It also shows the areas where little progress has been made. At the same time it makes clear which human activities and impacts still played an important part between the QSR 2004 and the QSR 2009.

2.1 Reclamations and dams between islands and mainland

In 1985, reclamations of salt marshes and intertidal flats were considered to be the largest threat to the Wadden Sea ecosystem, mainly because the impact was seen as irreversible. At that time reclamations of part of the Wadden Sea were still being discussed. Nowadays, Wadden Sea policy in all three countries makes any reclamation highly improbable. Instead, summer polders along the coast of the Wadden Sea are changed to salt marshes and intertidal flats by removing (part of) the surrounding seawalls.

Dams to the islands were also seen as a very serious threat in 1985. Again, this is a discussion of the past.

This changed attitude to reclamation and dam-building shows that the largest threats to the Wadden Sea have been eliminated. This is due to a strong involvement of nature conservation NGOs and a consequent governmental policy on protection of the Wadden Sea.

2.2 Damaging effects of water pollution

The 1985 report put effects of various forms of water pollution high on the list of threats to the Wadden Sea. PCBs, oil pollution, pesticides, heavy metals, discharge of wastewater with high concentrations of organic matter from agricultural industries, and eutrophication were listed in an order of decreasing impact. Since that time pollution problems have greatly diminished. For example, the huge loads of waste water sluiced by agricultural industries into the eastern Dutch Wadden Sea have completely disappeared. PCBs, pesticides and heavy metals all have strongly decreased and nowadays occur in mainly low quantities (see chapter 3.2). Oil pollution is still present and continues to constitute a problem. Eutrophication of the Wadden Sea was increasing in 1985 but has been decreasing in later years. This reduction of pollution problems is due to an active environmental policy of all states bordering the North Sea. However, some forms of pollution continue to occur in smaller quantities and their presence is still being monitored (see sections 3.1 and 3.2).

2.3 Dredging and extraction of sand and shells

Dredging and extraction of sand and shells figured high on the list of 1985 threats. Since 1985 extraction of sand and shells has been strongly regulated and has been confined to the deeper parts of the Wadden Sea and the North Sea. In parts of the Wadden Sea, sand can only be extracted in combination with dredging; otherwise it has to be brought in from the North Sea.

Dredging of shipping lanes has been increasing since 1985 to accommodate ever larger vessels on their way to the major ports in the Wadden Sea area. At present it constitutes a major problem especially in the estuaries of Ems, Weser and Elbe. Dredging causes water turbidity which cuts light penetration of the water column.

2.4 Cultivation of mussels, oysters and fish

Cultivation of blue mussels occurs in Germany and The Netherlands. The culture is based on the availability of small seed mussels which are fished on wild banks and subsequently sown on the culture plots for growth to marketable size. Since 1985 the collection of seed mussels has had an increasing impact on the presence of wild mussels. Around
Figure 2.1: Landings of blue mussels in the Wadden Sea 1965–2007 (in tons wet weight). (Source: Nehls et al., 2009, QSR 2009, Thematic Report No. 3.5).

Figure 2.2: Areas in the Wadden Sea region permanently closed for mussel fishery in 2008.

1990 an unprecedented low was reached in the Dutch Wadden Sea. At present, regulations to prevent overfishing and damage to natural values are in place in all Wadden Sea countries.

Cultivation of European flat oysters is an activity of the past: this oyster species is now extinct. Its market position has partly been taken over by the Pacific or Japanese oyster, an alien species introduced into the Wadden Sea around 1985. Some experimental fishing is carried out on the now-abundant oyster beds.

Cultivation of fish does not play an important part in the Wadden Sea.

Amount and abundance of natural spatfall of blue mussels is always varying. Hence, catches of blue mussels show strong fluctuations per year and region. Because of low seed availability, in recent years low catches were reported, accompanied by a decreasing or failing spatfall and declining mussel harvest (Fig. 2.1).

In the period 1994–2007 the average annual landings of mussels were about 56,000 tons wet weight (including shells). Most of them (about 35,000 t) were landed in The Netherlands. On average about 70% of all Wadden Sea mussels are of Dutch origin. A considerable part of the German landings are transported to The Netherlands where the majority of landings are traded. Blue-mussel fishing is regulated in all three countries and in certain areas is not permitted at all (Fig. 2.2).

In The Netherlands the mussel culture was also restructured. Starting in 2008, a programme started to gradually phase out fishing of seed mussels from the sea floor. Instead they were collected from ropes and nets suspended in the water. It is foreseen that in a number of 20% increments, all seed mussels will ultimately be obtained from suspended ropes and nets. Presently, shortages of seed mussels in the Dutch Wadden Sea are compensated by seed mussels imported from the...
German Wadden Sea, and mussel cultures off Sylt have even been supplied with imports from the British Isles in recent years.

2.5 Extraction and transport of natural gas and crude oil

Natural gas was extracted from under the Wadden Sea from locations on the mainland (Groningen field) since about 1960. In 1981 licenses were issued for gas extraction directly from the Wadden Sea area in The Netherlands (Zuidwal, Ameland). In the outer part of the Ems estuary gas was extracted from German territory. At that time the impact of gas extraction was not very clear and serious consequences were predicted. Hence, a monitoring program was established at the Ameland site in 1982. The results of this monitoring program were used in discussions about extracting gas from new fields in the Dutch Wadden Sea after 1994. It was finally decided to grant a new license for gas extraction from underneath the Wadden Sea near Lauwersoog. The impact of this activity is closely monitored; if the subsidence of intertidal flats and salt marshes exceeds a certain threshold value, the extraction will be stopped. So far the subsidence of the flats seems to be compensated by sedimentation of sand and mud. Hence, ecological effects seem negligible.

Crude oil is extracted from the Dithmarschen part of the Wadden Sea. Due to strong safety precautions no oil pollution incidents have occurred. The oil was initially brought to the mainland by tankers, but since 2005 this has been done via a pipeline. No incidents have been reported.

Natural gas from the Wadden Sea, the North Sea and the Wadden Sea islands is transported through pipelines. The construction and situation on the seabed of these pipelines had a considerable impact on the tidal flats and channels but monitoring has shown that the original ecosystem conditions were restored in 5-10 years.

The State Parties confirmed their commitment not to permit exploration and extraction of oil and gas at locations within the boundaries of the Wadden Sea World Heritage Site.

2.6 Fisheries for fish, cockles, blue mussels and shrimp

In the 1985 report, fishing for fish and brown shrimp was believed to have a stronger negative impact than fishing for cockles and seed mussels. Based on a major research effort, this point of view has changed to the present notion that shellfish fisheries are more harmful than fisheries for shrimp.

In the period between QSR 2004 and QSR 2009 fishing in the Wadden Sea hardly involved fish. Brown shrimps and blue mussels were the main catches. Starting in 2005, the mechanized fishing of cockles, which proved particularly harmful to the tidal flat ecosystem, was prohibited in The Netherlands; in Germany and almost all part of the Danish Wadden Sea it was already banned. In The Netherlands also the mussel culture is being restructured. Landings of brown shrimps were high in the period 2004-2008.

2004 was the last year in which mechanized fishing for cockles was allowed in The Netherlands (Fig. 2.3). Nowadays cockle-fishing is prohibited in most of the Wadden Sea. Only a manual cockle fishery is still allowed in The Netherlands with a maximum yearly catch of 5% of the cockle stock. A maximum of 31 licenses for manual cockle fishery have been granted. The fished amounts were between 0.1 and 1.5 % of the stock (Fig. 2.4).

In all three Wadden Sea countries, fishing of brown shrimps (Crangon crangon) is carried out in the offshore coastal waters and in almost all

Figure 2.3: Landings of cockles in the Wadden Sea 1977-2007 (in tons wet weight) (sources: DTU Aqua, Fischerblatt, RIVO, PVIS), (QSR 2009).
gullies and channels within the Wadden Sea. Only in the Danish part of the Conservation Area, in 95% of the area of the Hamburg National Park and in the zero-use zone of the Schleswig-Holstein National Park in Germany is shrimp fishery not allowed. Generally, there are no substantial differences in policies and practices within the Trilateral Cooperation Area, except for Denmark where shrimp fishery is prohibited within the line of barrier islands. Landings are recorded by country and kept separately. Record landings were found in 2005 for all three Wadden Sea countries. However, German landings declined in 2006, posing the question as to whether the lower catch was caused by reduced fishing activity or reduced stock.

The Netherlands

In the Dutch part, shrimp fishery is carried out by 204 licensed vessels. Of these, 90 vessels operate in the Wadden Sea, with 60 exclusively fishing on shrimps. The total average annual catch in The Netherlands (including that from vessels outside the Wadden Sea) was about 15,000 t in most recent years (Fig. 2.5.). Fishermen estimated that roughly half of these landings are fished in the Wadden Sea.

Germany

In Germany, the shrimp catch has on average been 12,000 t/yr (1994-2007). Fishery on small-sized shrimp for animal consumption and fish meal is still carried out in Niedersachsen in the second half of the year. The landings are around 600-1,200 t/yr, which is about 13% of the amount landed for human consumption in Niedersachsen.

Denmark

In the last 15 years, between 21 and 28 licensed vessels have fished for shrimps in Danish waters west of the ‘Shrimp Line’ (SL) drawn between the Wadden Sea islands from the peninsula of Skallingen to Rømø. Between 100 and 150 vessels (mainly German, Dutch and a few Belgian) fish for shrimps periodically or more permanently in the Danish Economical zone in the North Sea. The SL has been enforced since 1977. In the last 15 years, the Danish landings have been on average...
around 2,900 t (only Danish vessels) and about 3,400 t annually (including vessels from other EU countries) (in Fig. 2.5, Danish data are total landings including foreign vessels).

2.7 Helicopters and other small aircraft
The 1985 study listed helicopters and small fixed-wing aircraft as causing disturbance of shorebirds and seals. Between QSR 2004–2009, this disturbance decreased, mainly because low-flying aircraft were prohibited.

2.8 Tourism, sailing
Every year many millions of tourists are drawn to the Wadden Sea coast. They constitute an important source of income for the region. For the people living in the predominantly rural regions of the countries bordering the Wadden Sea, there is in most cases no alternative to tourism. Almost 50 million overnight stays, with a turnover of up to 6 billion euro per year, were estimated for the years 2007/2008. However, the available data sources, applied methods and statistics in the countries are too different to allow a reliable quantitative trend analysis and impact assessment for the entire Wadden Sea. To improve the situation, a multidimensional market research instrument should be developed with which demand, changes in utilisation behaviour, and their impacts on nature and the environment, can be monitored. It should also form the basis for coordinated regional development concepts in the Wadden Sea region. These need to set out a clear overall direction but allow for flexible and pragmatic solutions to the many specific challenges posed by the diverse demands of nature protection, tourism and recreation.

The recent designation of the Dutch–German Wadden Sea as UNESCO World Heritage Site is likely to enhance tourists’ awareness of the need to protect the Wadden Sea. The development of a sustainable tourism strategy as requested by the UNESCO World Heritage Committee in June 2009 should be used to establish a reliable basis for monitoring and assessment of tourism impacts on the Wadden Sea.

2.9 Military training
Military training was recorded in the 1985 report as having moderate impact, mainly through disturbance of shorebirds and seals. Now, 25 years later, the impact has been reduced even further.

2.10 Shipping
Along the Wadden Sea coast, a number of large ports of international significance form the destinations of many merchant vessels. The waters off The Netherlands, Germany and Denmark are among the world’s busiest shipping routes. Merchant shipping is of high economic importance for the Wadden Sea Region, but a shipping accident could have disastrous ecological and economic consequences for the Wadden Sea. Therefore shipping safety, including avoidance of illegal dumping of oil residues, is of utmost importance.

To raise awareness of the vulnerability of the Wadden Sea, the area was designated as a Particularly Sensitive Sea Area (PSSA) by the International Maritime Organisation (IMO) in 2002.

The high risk and potential consequences of accidents, and the PSSA designation, pointed to the need to maintain and where necessary enhance shipping safety and reduce impacts from shipping on the Wadden Sea. The International and European Communities have introduced several important pieces of legislation aimed at protecting the environment from shipping activities. Also further implementation of policies and actions to prevent oil pollution from shipping – both from illegal discharges and from accidents – as well as control and enforcement measures needs to be continued.

2.11 Hunting
Already in 1985 hunting had a minor impact on the Wadden Sea system. This is still true at the time of QSR 2009.

2.12 Scientific research
In 1985 it was concluded that scientific field research was not entirely without effects on the Wadden Sea ecosystem. This situation has not changed in 2009.

2.13 Not listed in 1985: wind energy
In 1985, the Wadden Sea area had hardly any large windmills for energy production. These were not seen as a problem for conservation. This has changed considerably.

In 2009 the construction of wind turbines is prohibited in the whole Wadden Sea Conservation Area. On the islands and the adjacent mainland outside the Wadden Sea Conservation Area, the construction of wind turbines and wind farms is only allowed if important ecological and landscape values are not negatively affected. Policies are in
force regarding the construction of wind turbines outside the Wadden Sea Area - along the coast and offshore - considering ecological and landscape criteria. In particular, cables crossing the Wadden Sea need attention.

In the Exclusive Economic Zone (EEZ) north of the Dutch Wadden islands, three offshore wind energy projects have been submitted for a license. In Germany, the first offshore wind farm "Alpha Ventus", around 45 km north of the island of Borkum, has been in operation since 2009. A further 18 projects for the German North Sea EEZ are at various stages of planning. In Denmark, three offshore wind farms are currently in operation in the North Sea. The latest one, of about 200 MW, Horns Rev II was inaugurated in September 2009.

2.14 Not listed in 1985: climate change and introduced alien species

The first scientific meeting on the effects of climate change on the Wadden Sea was held in 1988. At that time, climate change was a new subject of scientific research. After more than 20 years the situation has changed considerably. It has been concluded that the effects of climate change are likely to be large. Enhanced temperatures will cause northern species to disappear and enable the settlement of species adapted to warmer climates. Sea level rise, if the predicted rate comes true, may be the most serious consequence of climate change, since it threatens the very existence of the Wadden Sea.

Climate change is treated in two separate chapter in the QSR 2009 focusing on geomorphological and ecological consequences. Effects of climate change may become apparent in many of the monitoring programs targeted at different groups of plants and animals.

Understanding the functioning of the Wadden Sea morpho-hydro-eco-system as a composite including positive and negative feedback mechanisms, is urgently needed to develop prognostic models and to construct reliable future scenarios. To this end, monitoring has to be extended to improve both temporal and spatial resolution to improve both the abiotic and biotic modeling of the Wadden Sea system.

However, in order to adequately understand and project the consequences of climate change for hydromorphodynamics, biodiversity and ecosystem functioning of the sea, we need to (1) extend our coastal monitoring efforts; (2) extend our knowledge on sensitivities and adaptation capabilities of (abiotic) key processes and (biotic) species in the marine environment; and (3) develop fit-for-purpose models to manage our marine environment.

Species introduced unintentionally with shipping and other transports, as well as introduced on purpose, are spreading at an unprecedented rate in the Wadden Sea. Many of the introductions benefit from recent warming. This invasion is accelerating and is shifting species dominance in the benthos and the dune vegetation in particular.
3. Monitoring Habitats and Species

3.1 Nutrients, phytoplankton and eutrophication

Eutrophication, caused by increased nutrient loadings, is one of the factors influencing the quality of the Wadden Sea area. Since the earliest nutrient measurements in the Wadden Sea, a clear increase in nutrient loadings and concentrations has been documented. Among the negative effects associated with the increased nutrient loads are Phaeocystis blooms, a decline of seagrass beds, increased blooms of green macroalgae and anoxic sediments. After a peak in the 1980s, nutrient levels have decreased again.

Eutrophication of the Wadden Sea continues to decrease. A main development since the QSR 2004 is a continuation of the decrease of riverine nutrient input. Also, compared to background estimates of autumn NH$_4$+NO$_2$ concentrations in the Wadden Sea, present values are still clearly elevated, but have decreased when compared to the QSR 2004.

3.1.1 Nutrients

Riverine nutrient input showed a gradual decrease during the period 1985-2006 (Fig. 3.1). Since 1985, the specific total nitrogen (TN) load to the Southern and Central Wadden Sea decreased each year by 2.1% on average. The specific total phosphorus (TP) load decreased even more strongly than the specific TN load, but in recent years the rate of decrease has slowed down. It now amounts to 2.9% per year for the Southern Wadden Sea and 2.1% per year for the Central Wadden Sea. Note that during the period 1985-2002 the rates were about 0.4% higher. In the Elbe and Weser, a slow-down in the decrease in specific TP load has been evident since about 1990.

Salinity-normalized nitrate+nitrite concentrations in the German Bight in winter reflect the decreasing total nitrogen load, and in some Wadden Sea sub-areas a decreasing trend is now apparent.

Salinity-normalized winter nitrate data (at salinity 27) show a downward trend in some areas since the early 1990s. In the Dutch Wadden Sea, a slight decrease was observed from around 50 µM (early 1990s) to around 40 µM (since 2002). In the Ems river district (Ems estuary and Lower Saxony), winter nitrate decreased from 80 µM (early 1990s) to around 60 µM (since 2002). In Dithmarschen (Eider district), winter nitrate decreased from 70-80 µM (early 1990s) to around 50-60 µM (since 2002). In the North Frisian Wadden Sea and in the Danish Wadden Sea, no clear trends were observed. Salinity-normalized nitrate concentrations were around 44-49 µM.

Salinity-normalized winter phosphate concentrations showed the strongest decrease between 1985 and 1995 (QSR 2004). Since then, no further changes are apparent for most areas and salinity-normalized concentrations range between about 0.9 µM in the western Dutch Wadden Sea, and about 1.1 µM in the Danish Wadden Sea to around 1.8 µM near the Ems and Elbe estuaries. In the western Dutch Wadden Sea only, a further decrease was observed, from 1.4 µM during the early 1990s to about 0.9µM since 2002.

However, compared to background estimates of winter nutrient concentrations (DIN 6 – 9 µM, DIP 0.4-0.5 µM), present values are clearly elevated.

3.1.2 Primary producers

The decreasing nutrient input (TN loads by Rhine, Meuse, Weser and Elbe) had a significant effect on the phytoplankton biomass (as chlorophyll) in the Southern Wadden Sea (Western Dutch Wadden Sea, Lower Saxonian Wadden Sea, Norderney) in summer. In the Northern Wadden Sea, decreasing TN loads by the rivers Weser and Elbe had a significant effect on the summer chlorophyll levels in the List Tidal Basin and in the Grådyb.
However, the evaluation of present levels against background estimates is difficult because the three Wadden Sea countries use different estimates, time windows and statistics. Background mean chlorophyll levels during the growth season (March–September) for the Dutch Wadden Sea are estimated at 8 µg Chl-a/l (Baretta-Bekker et al., 2008). German estimates are almost two times lower and amount to 2–3 µg Chl-a/l which are similar to the range in Denmark (1.9 µg and 4.0 µg Chl-a/l, (May–September). In all areas, present values are clearly higher than background values.

In general, summer chlorophyll levels are higher in the Southern Wadden Sea than in the Northern Wadden Sea and are in line with the conclusion in QSR 2004 of a higher eutrophication status in the Southern Wadden Sea. However, within both Wadden Sea regions, large differences exist: hotspots are the Eastern Dutch Wadden Sea, the Elbe estuary and Gradyb. Lowest values are found in the Danish and North Frisian Wadden Sea (between Eiderstedt and Gradyb) (Fig. 3.2)

Toxic blooms are observed in all parts of the Wadden Sea, but no decreasing or increasing trend in relation to nutrient input is evident. The main nuisance blooms were due to Phaeocystis. Long-term data from the Marsdiep (Western Dutch Wadden Sea) show a decreasing trend in bloom duration. Present macroalgae abundance in the Northern Wadden Sea correlates with riverine TN input and is below the maximum levels observed during the early 1990s.

### 3.1.3 Organic matter turnover

The autumn NH₄⁺NO₂ values are a good indicator of organic matter turnover in the Southern Wadden Sea. The decreasing nutrient input (TN loads by Rhine and Meuse) lead to decreasing autumn NH₄⁺NO₂ values in the Southern Wadden Sea. In the Northern Wadden Sea, a less clear picture emerges and no correlation with riverine TN input is observed (Table 3.1).

The recent distribution patterns of autumn NH₄⁺NO₂ values show a similar pattern as summer chlorophyll and both proxies are strongly correlated ($r^2 = 0.87; N = 7; p <0.00021$; compare van Beusekom, 2006). This supports the view that the observed regional differences are real. Autumn values identify the same eutrophication hotspots and low eutrophication regions as summer chlorophyll. Compared to background estimates of autumn NH₄⁺NO₂ values, present values are clearly elevated (Table 3.1) but have decreased when compared to the QSR 2004.

The results show that current policies to reduce nutrient input have been successful with regard...
Table 3.1: Classification of the Wadden Sea into Non-Problem, Potential Problem and Problem Areas based on autumn concentrations of NH₄⁺NO₂ (µM) as proposed by van Beusekom et al. (2001) and modified with data from the recent study. The division in sub-regions is based on the availability of seasonal data. The present autumn values refer to values between 2000 - 2006. Non-problem conditions were based on background values for the Western Dutch Wadden Sea. Values for the other areas proportionally assigned on the basis of present-day values (van Beusekom et al., 2001). All threshold values were formally derived and an uncertainty range of ±1 µM should be added. (Beusekom et al., 2009, QSR 2009 Thematic Report No. 6).

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<tbody>
<tr>
<td>Western Dutch Wadden Sea</td>
<td>&lt;3.0 µM</td>
<td>3.0 µM &lt;&gt; 8.3 µM</td>
<td>&gt; 8.3 µM</td>
<td>9.9 µM</td>
<td>8.2 µM</td>
</tr>
<tr>
<td>Eastern Dutch Wadden Sea</td>
<td>&lt;4.0 µM</td>
<td>4.0 µM &lt;&gt; 10.2 µM</td>
<td>&gt; 10.2 µM</td>
<td>19.8 µM</td>
<td>16.8 µM</td>
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<tr>
<td>Lower Sax. Wadden Sea</td>
<td>&lt;3.2 µM</td>
<td>3.2 µM &lt;&gt; 8.2 µM</td>
<td>&gt; 8.2 µM</td>
<td>10.6 µM</td>
<td>9.9 µM</td>
</tr>
<tr>
<td>List Tidal Basin</td>
<td>&lt;1.9 µM</td>
<td>1.9 µM &lt;&gt; 4.2 µM</td>
<td>&gt; 4.2 µM</td>
<td>6.1 µM</td>
<td>5.9 µM</td>
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<tr>
<td>Danish Wadden Sea (Gradyb)</td>
<td>&lt;2.5 µM</td>
<td>2.5 µM &lt;&gt; 6.5 µM</td>
<td>&gt; 6.5 µM</td>
<td>10.2 µM</td>
<td>8.3 µM</td>
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The present study confirms the previous conclusion (QSR 2004) on regional differences within the international Wadden Sea. The reasons for these differences have to be revealed in order to formulate region-specific standards for a good ecological status, as for instance demanded by the Water Framework Directive. Further effort is needed to understand the regional differences in nutrient patterns and their implications for the coastal ecosystem, and to improve the temporal and spatial resolution of existing monitoring programs in order to cover the entire seasonal cycle.

For the assessment of the phytoplankton eutrophication status in the Wadden Sea, two metrics are presently discussed in the Water Framework Directive: 1) the percentage of observations with Phaeocystis bloom conditions (>10⁷ cells/l); and 2) deviations from a reference phytoplankton biomass. In the latter case, the 90-percentile of chlorophyll-a during the period March-October is used as indicator. In the Wadden Sea area, no agreement has been reached yet on the reference conditions and boundaries between good and moderate for phytoplankton biomass.

3.2. Hazardous substances

The pollution of the Wadden Sea derives mainly from external sources, i.e. the major rivers Elbe, Weser, Ems and the IJssel, the North Sea and the atmosphere. Although long-time downward trends are observed for most hazardous substances, there are no significant differences between the situation described in the QSR 2004 and the present situation described in the QSR 2009. Cleaning-up the Wadden Sea is obviously a slow process.

The riverine input of metals (Cd, Cu, Hg, Pb, Zn) in the period 1996-2007 remained at the same level as in 1995 or continued to decrease at a moderate rate (Fig. 3.3). For some metals, the target of background concentrations in sediment has not yet been reached in all sub-areas of the Wadden Sea. Regarding the “effects range level”

Figure 3.3: Loads of Cadmium by riverine inputs (tonnes/year). Right panel: corrected for flow differences to a standardized flow of 1010 m³·y⁻¹ (comparable to the average flow of the Weser). The major decrease occurred until 2002. The rivers Elbe and Weser water concentrations are twice those of Lake IJssel, Eider and Ems (Bakker et al., 2009, QSR 2009 Thematic Report No. 5.1 Hazardous substances).
(ERL) by OSPAR, mercury and lead concentrations in the sediments pose a risk to the Wadden Sea ecosystem in the majority of sub-areas. For metals in blue mussels, the target of background concentrations has been reached for copper, zinc and nickel, whereas cadmium, mercury and lead concentrations are above the background. Therefore, continued effort to reduce metal discharges through rivers debouching into the Wadden Sea is necessary.

For a number of xenobiotic (man-made) compounds discharges to and concentrations in the Wadden Sea (Fig. 3.4) have decreased; however, the target (concentrations resulting from zero-emission) has not yet been reached. Some of these substances still pose a risk to the ecosystem. Many newly developed xenobiotics, including hormone disruptors, have a wide occurrence in the Wadden Sea ecosystem, and may have deleterious effects on it. The concentrations of xenobiotic substances in sediment, blue mussels and bird eggs have decreased over the last 20 years due to a reduction in riverine inputs and a phase-out of compounds such as PCBs, Lindane, DDT and TBT. However, concentrations of some compounds such as PCB still exceed background levels. Unexplained peaks continue to occur as well, which may be related to old deposits. Altogether these fluctuations still may have effects on sensitive biota. The target of “concentrations of man-made substances as resulting from zero-discharge” has not been reached due to the remaining diffuse losses and numerous hazardous substances still being in use. This implies that efforts to further reduce diffuse and also global emissions and losses need to continue.

The major sources of oil pollution at sea in the Wadden Sea region are illegal discharges of fuel oil residues, which are a constant threat to sea- and waterbirds. This is confirmed by a clear clustering of recorded slicks around the major shipping lanes in the southern and in the south-eastern North Sea.
Although the oil rates among beached birds have decreased since the 1980s they are still high.

The oil rate of the guillemot has decreased since the mid 1980s but is still about three times higher than the OSPAR-EcoQQ of 10% set for this species (Fig. 3.5). The results give a modest indication of a sharper decline since 1999, and in fact, with the exception of Germany’s North Sea exposed coasts, oil rates seem to have stabilized over the most recent years at levels just below 50%.

The Wadden Sea coast is hit regularly by oil spills, which cause the deaths of thousands of birds.

Litter in the marine environment is a constant threat to wildlife, a hindrance to human activities, incurs high economic costs, is unsightly and reduces the recreational value of our coasts. It is a worldwide problem that does not stop on the borders of the Wadden Sea. Plastic items make up the major part of litter polluting the marine environment. One of the main sources of pollution is the fisheries industry, with lost or discarded nets, although various forms of packaging account for a large proportion of the litter recorded on beaches in the region. OSPAR beach surveys indicate that litter pollution is presently on the increase in the southern North Sea area and a recent analysis of beached bird data indicates that entanglements with litter are also on the increase in the region (Fleet et al., 2009, QSR 2009 Thematic Report No. 3.8).

### 3.3 Benthic habitats

Changes of the geomorphology and its driving force, sea level rise, are slow processes and consequently no significant changes have been observed in the short period between the QSR 2004 and the QSR 2009. The same conclusion applies to the area of seagrass beds and the zoobenthic biomass; both are more or less stable. An exception is the Baltic tellin Macoma balthica which has strongly decreased. Intertidal mussel beds continued to decline except for the eastern Dutch Wadden Sea.

#### 3.3.1 Geomorphology

The core habitat of the Wadden Sea region is the tidal area with its large extent of coherent intertidal and subtidal flats fringed by salt marshes and beaches, and dissected by branching tidal inlets exchanging half of the tidal volume twice daily with the North Sea. The large intertidal flats came into existence about 5000 years ago when the average tidal range had increased from <1 m.
Figure 3.6b: First attempt of the reconstruction of the entire Wadden Sea coast of 1850 and 2000 based on historical, geological, geomorphological, topographic and soil maps, as well as on previous reconstructions of parts of the Wadden Sea (Wiersma et al., 2009, QSR 2009, Thematic Report No. 9 Geomorphology).
to ~2 m. The further course of geological development differed somewhat between the southern, central and northern Wadden Sea, and intermittently some tidal areas turned into brackish and freshwater marshes or bogs. Traces of this history are still evident and occasionally have effects on present day processes.

The main driving force of coastal morphology is a balance between sea level change and sediment supply from shallow zones of the adjacent North Sea. With the onset of land claim by the 13th century AD, the Wadden Sea entered a phase when human engineering interfered with natural developments and which culminated with large-scale embankments in the 20th century. Compared to 1500, the area of tidal flats decreased by about one third, mainly due to land claim and in the north also because of coastal retreat. Still, the large intertidal area has remained the most outstanding natural feature of the Wadden Sea in a world-wide comparison (Fig. 3.6). With an expected rate of sea level rise of about 1 m at the end of this century, it is questionable to what extent a natural sediment supply from the North Sea could keep up with such a rise in water level. In the early post-glacial phase of the Holocene, sedimentation rates were insufficient to fill up the coastal area at such a high rate of sea level rise. Presumably this is what the tidal area of the Wadden Sea is facing in the coming decades.

Sand nourishments are already carried out to defend the outer coastline of barrier islands. In a similar way, supplementing natural sedimentation rates in the tidal basins could be considered to allow intertidal flats to grow at the same rate as the sea level rises. Accomplishing this without harming the benthic habitats of the tidal area is likely to be a main challenge for the protection of the Wadden Sea in the decades to come.

### 3.3.2 Seagrass beds and green algal mats

The past geological development and present pattern of sedimentation and erosion are relevant to the distribution of major habitats in the Wadden Sea. For example in the northern region, large meadows of seagrass abound where plants find a firm rooting in peat and clay of drowned land now underlying a thin layer of loose sediment. Conversely, areas where shifting sediments prevail tend to be devoid of seagrass. Seagrass beds are a very sensitive habitat in the intertidal zone. They are very unevenly distributed with small beds of mostly low plant density in the southern and central Wadden Sea whereas, in the northern Wadden Sea, the beds are extensive with a dense cover from July to September. Seagrass beds with a coverage of more than 20% comprise about 11,000 ha with more than 90% of these beds occurring in the North Frisian and Danish part of the Wadden Sea (Fig. 3.7). To what extent this unevenness is natural or caused by eutrophication and other disturbances is still not clear. Climatic differences cannot account for this pattern because seagrass beds of the two species *Zostera noltii* and *Z. marina* thrive all along the Atlantic shores from Scandinavia to northern Africa.

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**Figure 3.7:** Distribution of intertidal seagrass beds (with various densities) in the Wadden Sea (in ha) in different sub-regions in 2007/2008 (van der Graaf et al., 2009, QSR 2009 Thematic Report No. 12).
After a long-term decline, there has been an increase in seagrass area since the middle of the 1990s. However, this may have come to a halt in recent years. The increase could have been a response to reduced eutrophication stress, improved light conditions, an intermittent decrease in storminess, or a combination of such factors. More research is needed on the cause of seagrass bed development because seagrass provides an important habitat in the Wadden Sea and is used as a main indicator of ecosystem quality. The methods for assessing seagrass beds require further harmonizing in the Wadden Sea. Management should continue to reduce nutrient loads to improve the growth of the two seagrass species which are best adapted to oligotrophic conditions. There is also concern that dredging and dumping of sediments and the subsequent light attenuation has been harmful to seagrass.

Green algal mats attained massive proportions in the summer months of the early 1990s. Subsequently they fluctuated strongly at a moderately high level with a strong peak in 2001. Omitting this peak value, the area covered by green algae, as observed from plane in the Schleswig-Holstein intertidal zone, is significantly correlated with the total nitrogen load of the Elbe and Weser. In spite of considerable scatter, this suggests that the extent of green algal mats may serve as an indicator for the eutrophication status in the Wadden Sea. However, other factors also seem to be important for the extent of green algal mats. For example, a rough sea easily removes green algae from exposed tidal flats. Often, drifting green algae become trapped between groynes of sedimentation fields and then smother any seagrass that is present.

### 3.3.3 Zoobenthos

Intertidal seagrass and green algae serve as food for brent goose and wigeon in particular, while the benthic fauna of all intertidal flats is important for foraging waders, shelduck and gulls. Particularly the mid tidal zone is rich in zoobenthic biomass. In parts of the subtidal zone quantities of biomass might be even higher. However, the latter habitat has not been sufficiently sampled throughout the Wadden Sea to make a sound estimate.

The deposit-feeding lugworm *Arenicola marina* significantly contributes to biomass on sandy intertidal flats but not on the estuarine mud flats and in the subtidal zone. Suspension-feeding bivalves usually dominate the biomass, *i.e.* the clam *Mya arenaria* at estuarine sites and the cockle *Cerastoderma edule* at marine sites. Occasionally alien species significantly increase the biomass, *i.e.* the razor clam *Ensis americanus* at the lowest tidal zone and the worm *Marenzelleria viridis* on mudflats in the Dollard. The establishment of such invaders suggests that the resident fauna had been below carrying capacity, probably under top-down control in the food web rather than being limited by food availability.

Over the past decades there are neither consistent temporal trends in total biomass in macrozoozoobenthos nor in the abundances of 19 species at ten localities spread throughout the Wadden Sea. The zoobenthos in general may not be very suitable for indicating trends in eutrophication. However, the tellin *Macoma balthica* has probably responded with enhanced growth and biomass to eutrophication in the 1980s to the mid 1990s in the western Dutch Wadden Sea. With the exception of the Dollard and a site near Norderney, this major food source for the large flocks of knots is now declining throughout the Wadden Sea.

The recent predominance of mild winters is having a negative effect on recruitment in many bivalves including *M. balthica*. The underlying process seems to be improved survival and early arrival in the tidal zone of predaceous crabs and shrimps which then prey heavily on bivalve spat in subsequent spring and summer. Severe winters
cause high mortality or delay in the appearance of these predators in the tidal zone. This may allow young bivalves to survive their early benthic stage. However, there seem to be many exceptions to this pattern.

Many sites show an increase in species richness after mild winters and none shows a decline. This may be seen already as a consequence of global warming. Monitoring of zoobenthos should be generally extended into the subtidal zone, and sampling efforts should be spread more evenly through the entire Wadden Sea. The macrozoobenthos is an important trophic link between the productive microalgae and the coastal birds in the Wadden Sea, and thus serves as a good indicator of ecological quality. This particularly applies to the mussel beds (*Mytilus edulis*) of the Wadden Sea which occur in the lower intertidal and at sheltered sites in the subtidal zone.

### 3.3.4 Mussel beds

After a strong decrease of intertidal mussel beds in the early 1990s, mussel fishing has been banned from substantial parts of the tidal area. Despite considerable efforts to protect stable mussel beds, most continued to decline. As outlined above, this may be caused by mild winters favouring predators on mussel spat. However, increases of mussels in 2001, 2003 and 2005 in parts of the Dutch Wadden Sea and locally also in Lower Saxony, indicates that factors other than winter temperature need to be considered to explain the population dynamics. The management target to increase the area of mussel beds has only been achieved in parts of the Dutch Wadden Sea. As with zoobenthos in general, more monitoring of mussels in the subtidal zone is necessary for a better understanding of the dynamics. The recent spread of introduced Pacific oysters on intertidal mussel beds as well as in the shallow subtidal will be discussed below in a section on alien species.

Mussels are cultured on the bottom in the subtidal Dutch and German Wadden Sea. For this a total area of 11,000 ha has been reserved, but only about half of that area is actually in use. The main reason for this is that parts of the reserved plots are unsuitable for mussel culture for hydrographical and geomorphological reasons. Young mussels are harvested from natural beds for transfer to the culture lots. In recent years, the scarcity of these so-called seed mussels was partly compensated by imports from the British Isles. Experiments are underway to collect young mussels on ropes and nets suspended in the water. These are out of reach of the benthic predators and survival of young mussels is much higher there than on the sea floor. Collecting spat in this way is common practice on many coasts in the world and has the potential to eventually free natural mussel beds from the disturbances caused by dredging for seed mussels in the Wadden Sea.

### 3.3.5 Subtidal habitats

Roughly one half of the tidal area consists of subtidal flats and deep gullies. This habitat is not as unusual as the large coherent intertidal flats of the Wadden Sea which supply the huge flocks of birds with food. However, on a European scale it is certainly important, with diving birds and marine mammals exploiting the subtidal habitats. Shrimp, crabs and fish commute between the inter- and subtidal zones. Many invertebrates and some macroalgae have partial populations in both zones. Very often the intertidal serves as a nursery and the adults occur subtidally, although the reverse occasionally occurs as well (i.e., the worms *Nephtys hombergii* and *Phyllophaga mucosa*).

In previous centuries, beds of the European oyster *Ostrea edulis* in the shallow and deep subtidal zone have been overexploited. This species no longer occurs in the Wadden Sea. Also almost all reefs of the colonial tubeworm *Sabellaria spinu-losa*, which once occurred in the deep gullies in the Danish and German Wadden Sea, are gone. Direct destruction with heavy chains to remove these obstacles which affected trawling for shrimp may have caused the decline. Other factors such as sediment dredging to ease shipping may have played a role as well. Repeated small disturbances by bottom trawling may prevent re-colonization. However, experimental studies should explore this issue.

Beds of subtidal seagrass *Zostera marina* in the northern and western Wadden Sea vanished in the wake of an epidemic disease in the 1930s and they never recovered. As with the native oyster beds and *Sabellaria*-reefs, the lack of recovery is not well understood. It is possible that the mere absence of factors which have caused the decline is not sufficient to trigger a recovery. In the westernmost Dutch Wadden Sea, the construction of the Afsluitdijk in 1932, causing changes in the hydrography, may have played a part as well. But even without these conspicuous biogenic habitats, the subtidal is a zone of high biodiversity, probably because of the relative shelter against strong surf from the open sea and high food availability in the shallows. There are indications that benthic biomass is even higher on shallow subtidal flats than in the mid intertidal.

Together with requirements of European Directives on ecological qualities, all this highlights that...
more research and monitoring needs to be done in the subtidal part of the Wadden Sea. For the intertidal and terrestrial parts, aerial photographs have been of great help to map the distribution of habitats. In the subtidal part, acoustic methods may help in an analogous way. With sidescan sonars towed behind a ship, the strength of the returning acoustic beam is measured and provides information on objects protruding from the sediment. Multibeam sonar systems have been mounted on the hull of a research vessel. The time between emission and the backscatter to the receiver is measured. This instrument provides highly accurate bathymetric records and can even be used for sediment classification. However, it cannot be used at very shallow subtidal flats. A combination of methods in addition to acoustic devices, such as underwater video, sediment coring and conventional oyster dredges, is required for surveying the subtidal Wadden Sea. This is regarded as an urgent task to improve nature conservation, as is restoring the Wadden Sea below low tide level where possible.

3.4 Aquatic alien species

The number of alien species in the Wadden Sea continues to increase. An important new addition to the range of alien species since the QSR 2004 is the American comb jelly *Mnemiopsis leidyi*. It is thought to cause major changes in marine ecosystems. The Pacific oyster *Crassostrea gigas* has continued its invasion of the Wadden Sea.

Alien species have been transported by human means across their natural boundaries, interact with native species, and may irrevocably alter ecosystem functions and the services ecosystems provide to humanity. The introduction of alien species for aquaculture or by shipping is not a new phenomenon. However, in recent years, such aliens are beginning to play a predominant role in the Wadden Sea ecosystem and can no longer be neglected as agents of change (Fig. 3.9). Just to name some of these changes: Dense swards of the introduced *Spartina*-grass extend salt marshes and displace other pioneer plants and intertidal flat organisms. Larvae of Pacific oysters *Crassostrea gigas* settle on mussels, grow faster and larger, and finally turn intertidal mussel beds into oyster reefs. After a few years, these in turn provide shelter for Pacific shore crabs of the genus *Hemigrapsus*. On the shells, an Australasian barnacle *Austrominius modestus* dominates native ones. In the shallow subtidal zone, clumps of these oysters provide anchorage to a more than 3-m long Pacific seaweed *Sargassum muticum*. On these branching algae clinging Pacific ghost shrimp *Caprella mutica* and drifting American comb jelly *Mnemiopsis leidyi* also becomes entangled in this kelp forest. Overall, it constitutes a completely new habitat in the Wadden Sea.

At least 50 introduced alien algae and invertebrate species have established with permanent populations in the Wadden Sea. Some remain rare, others first boost and then bust, and some achieve continuing dominance. In most cases they constitute additions, fill apparently empty niches, and provide new habitat structures. At times they benefit native species, but they may also harm or displace them. It is impossible to simply categorize aliens as bad or good. Their interactions with natives and among each other, their effects on habitats and on human health may vary between sites and with time. More subtle are introductions of genetically different individuals which then interbreed with residents. It is also possible that new reciprocal adaptations have evolved in the course of interactions between alien and native species. All these introductions and their consequences are essentially irreversible developments, changing the biota of the Wadden Sea forever. Their number is rapidly increasing and none of them has gone again or is likely to do so.

This conspicuously advancing tide of alien invaders is primarily facilitated by a global exchange of aquaculture organisms and by more, larger and faster ships carrying more alien organisms. Establishment is eased by the common availability of floating objects such as buoys and pontoons where introduced species may settle in the absence of benthic predators. Also, hard coastal defence structures often constitute gateways for alien
species. A breakthrough for aliens is now provided by the recent trend of warming by an average of 1.5°C in the past 30 years.

Most donor regions of introduced species are at coasts with a warmer climate than it used to be in the Wadden Sea. Either newcomers now meet easier conditions to become established, or aliens which were already introduced a long time ago now no longer suffer from severe winters and benefit from warmer summers. The combined effect of increasing global trade and global warming has triggered a revolution in the biotic composition of the Wadden Sea compared to the earlier rates of changes. Alien species introductions are a global phenomenon and some alien species become universal. For instance, the Pacific oyster is spreading to almost all coasts within temperate zones, heading a progressing homogenization of the world’s coastal biota.

This tends to undermine the biotic uniqueness of the Wadden Sea, calling for a global management to reduce the rate of introductions. Treatment of ballast water and control of hull fouling, halting the use of alien species in open aquaculture facilities, and banning any other form of intentional introductions are obvious steps to be implemented in the framework of international conventions. The Trilateral Wadden Sea needs a common approach to the prevention, management and monitoring of aquatic and terrestrial alien species introductions. Monitoring and early detection is necessary because eradication is only feasible at a very early stage of invasion. Above all, a strong effort is required to raise more awareness among professionals and the general public as a prerequisite for effective precautionary measures.

### 3.5 Salt marshes

The QSR 2009 revealed an increase of nearly 1,600 ha (about 5%) of salt marshes in the Dutch and German parts of the Wadden Sea when compared to the QSR 2004. However, changes in the vegetation between the QSR 2004 and the QSR 2009 feature a decrease in the pioneer zone and an extension of late successional and climax stages.

Salt marshes occupy the upper parts of the intertidal zone and the supralittoral, i.e. the interface between land and sea and extend vertically from well below the mean high-tide level up to the highest water mark. They constitute precious and irreplaceable habitat for a wide range of organisms, although the number of species per unit area may be relatively low. With about 40,000 ha (Table 3.2), salt marshes of the Wadden Sea make up about 20% of the total area of salt marshes along the European Atlantic and Baltic coasts.

#### 3.5.1 Area of salt marshes has increased

The QSR 2009 revealed an increase of the total extent of salt marshes in The Netherlands and German parts of the Wadden Sea when compared to the QSR 2004 (39,680 ha and 40,620 ha, respectively, Fig. 3.10). The new marshes comprise mainly young natural salt marsh including embryonic dunes and driftline vegetation. This increase occurred predominantly on both the islands and the mainland coast of Schleswig-Holstein.

![Table 3.2: Recent extent (ha) of salt marshes in different parts of the Wadden Sea specified according to their geomorphology. The areas include the pioneer zone, except for Denmark. The pioneer zone has been defined as the area where pioneer vegetation cover ≥ 5%; in Schleswig Holstein, this threshold value was 10%. On the islands, de-embanked summerpolders may be added to the back-barrier marshes; on the mainland to the foreland-type salt marshes. (Esselink et al, 2009, QSR 2009 Thematic Report No. 8).](image-url)
3.5.2 Vegetation development and ageing

The main result from the comparison of vegetation changes in the QSR 2009 is a decrease of the pioneer zone and an extension of late successional and climax stages in many salt marshes across all Wadden Sea regions. These climax communities are usually formed by almost monospecific stands of the dominant plant species (namely *Elytrigia atherica* community on the high salt marshes, *Phragmites australis* community in brackish marshes, and *Atriplex portulacoides* community in low salt marshes). Hence, climax communities have a low species and structural diversity. See Fig. 3.11 for examples without or reduced live-stock grazing from The Netherlands and Fig. 3.12 for examples from Germany. The examples also show that the changes take not years but decades.

Not only does ageing affect the floristic diversity on the salt marsh, but also the diversity of the entire salt-marsh community. About one third of the invertebrate fauna is phytophagous, among which a considerable number are highly specialised monophagous species. Thus extension of climax plant communities at the expense of early succession communities will inevitably also lead to a decline of the specific invertebrate diversity in a salt marsh.

The salt-marsh succession may be driven by three factors, namely: (1) an increase in marsh elevation by sedimentation (dominates in the foreland-type salt marshes), (2) an increase in plant nutrients, especially nitrogen (main factor in sandy back-barrier marshes), and (3) cessation of livestock grazing. A lack of natural spatial dynamics may form another important factor for the observed overall trend of ageing. The contemporary Wadden Sea salt marshes have to a large extent been dictated by human activities.

Within that framework recommendations are (1) a reduction of artificial drainage which may increase abiotic variation and a retardation of the ageing processes in wet parts, (2) creation of wide salt marshes (in combination with de-embankments as indicated in the next paragraph) which have the possibility to develop wet parts, (3) superimposed on the abiotic conditions, discussion on the target type of community for conservation, including plant and animal species composition, structure of the vegetation being affected by livestock grazing (intensive grazing with a homogeneous sward, moderate grazing with a heterogeneous sward, no grazing with a homogeneous sward at the long term), or ‘laissez faire’ without further discussion.

3.5.3 Salt-marsh restoration

In the QSR 2004, an increase of the area of salt marshes was assessed as management target and de-embankment of summer polders was considered an appropriate measure. Over 800 ha of salt marsh have been restored so far. In addition to
3.6 Beaches and Dunes

Since the QSR 2004, no progress was made in 1) increasing the dynamics of dune systems, 2) reduction of atmospheric deposition, and 3) in reduction of groundwater extraction.

Beaches and coastal dunes together constitute one morphogenetic habitat system and play an important role in the Wadden Sea. They build the barrier islands and provide habitats for many, often highly specialized, species. In their shelter, salt marshes can develop. At the same time, they are important for coastal defence and as recreation areas.

3.6.1 The status of the dune fauna

It is increasingly acknowledged that the fauna in the dunes plays an important role. Of course, livestock is introduced into many dune systems. This is done partly to enhance the dynamics and partly to retard or stop succession towards climax stages. The effects on the geomorphology and vegetation are often part of monitoring programmes. However, the status of natural fauna elements including birds, mammals and invertebrates, is largely unknown. Programmes that monitor the effects of management practices should be extended to include the fauna.

3.6.2 A new geo-ecological concept of Wadden Sea barrier islands

In response to questions about both climatic change and coastal safety on the one hand, and different scenarios for a nature-conservation strategy on the other hand, a new model of the geo-ecological functioning of Wadden Sea barrier islands has been developed (ten Haaf & Buijs 2008; de Leeuw et al. 2008; Löffler et al. 2008, see details in Lammerts et al., QSR 2009 Thematic Report No. 15). The model identifies the most important geomorphic driving forces at different spatial and temporal scales. As a result, a barrier island in the model comprises five geomorphological main units with several sub-units (Fig. 3.13):

(1) Island heads:

The development of island heads depends on the sedimentation and erosion processes in the tidal deltas between the islands. Periodically bare beach plains grow together with islands: at the north side when the sand comes from the outer (ebb) delta, at the south when it comes from the inner (flood) delta. On the island heads, green beaches may develop in places where the beach plain is partly cut-off from the sea by embryonic dunes. The vegetation of green beaches is characterized by a combination of pioneer species from salt marshes and dune slacks. Salt marshes may also develop on the leeside of embryonic dunes or dune ridges.

(2) Dune-bow complexes:

The dune bow complex comprises an old central part of the model island, where much sand has been blowing in during long periods of sedimentation. Different dune ridges merged to large
parabolic dune systems which include grey dunes, heath lands, dune slacks, scrub and woodland. Extensive salt marshes have developed on the south side of dune-bow complexes under the influence of inundation by seawater from the Wadden Sea. These marshes are characterized by different vegetation zones from high to low salt marsh and pioneer vegetation. Large parts of these salt marshes have been turned into agricultural areas through embankment.

(3) Wash-over complexes:
A wash-over consists of a north-south oriented part of the beach plain accompanied at both sides by natural dune ridges. Wash-over complexes that are formed on the North Sea side of the island gradually merge with salt-marsh vegetation on the Wadden Sea side. However, this connection has often been closed by artificial sand dikes. The wash-over complex itself can either be bare, covered with algae or with pioneer salt-marsh or dune vegetation comparable to green beaches. A dynamic wash-over complex is subject to both the deposition and erosion of sand by wind, as well as to frequent inundation by seawater and sedimentation from the water column. These processes affect both succession and rejuvenation processes of the salt marsh that fringes the wash-over complex to the south.

(4) Island tails:
The island tail consists of a beach plain at the eastern side of the island. Initially, island tails are bare sand flats that are periodically subject to erosion and accretion. On these sand flats, small embryonic dunes may be formed, and may grow into larger dune complexes that are separated from each other by wash-overs. On most of The Netherlands islands, these dune complexes have been connected by an artificial dune ridge, especially during the 20th century. On the leeside of these artificial dune ridges extensive salt marshes have developed, such as the Boschplaat on the island of Terschelling. The presence of the artificial dune ridges explains why in a quantitative sense, island tails are the most important units for salt-marsh vegetation, and why the actual extent of island salt marshes is well above historic reference values. In addition, the almost complete elimination of morphodynamic influences from the North Sea on both sedimentation and erosion explains that young succession stages are almost absent, and old succession stages generally dominate the northern fringe of these marshes.

(5) Beach and foreshore
The beach and foreshore at the North Sea side are important elements as a transport route for sedimentation and erosion. The beach can harbour embryonic dunes. Periodically, extensive areas of green beach may develop, and then may disappear quickly when large-scale dynamic processes are less favourable.

The next step could be the extension of this model to all barrier islands in the Wadden Sea. Moreover, experimental tests are needed to validate the model.

3.7 Offshore Area
No major geomorphological changes in the offshore zone have been recorded. A comprehensive monitoring programme for the offshore zone is lacking in TMAP. Bird monitoring in the offshore zone of the Wadden Sea has been started only by Schleswig-Holstein in 2004. There is insufficient monitoring data to draw conclusions on biological changes.

The Offshore Area of the Wadden Sea Cooperation Area is defined as the near-shore zone between the barrier islands and the line three nautical miles off the baseline (respectively 12
nautical miles when the conservation area exceeds this line). The boundaries of this 4,000-km² area are artificial. However, with its slope from about 15 m depth up to the island shores and ebb delta shoals in front of the inlets, this zone constitutes an important transition from the Wadden Sea proper to the open North Sea. In this zone, the most violent breakers occur, and many ships have been wrecked during storms in this turbulent sea. Waves mobilize sand from the bottom, and the net transport processes of sand may play a key role for the sediment budget of the Wadden Sea. The permanent exchange of water masses, sediments, planktonic drift and animals migrations between the tidal areas and the offshore zone justify the inclusion of the latter in the Cooperation Area.

Among the multiple anthropogenic pressures in the offshore zone, offshore wind farms, ship traffic, fisheries and sand and gravel extractions are of primary concern. The increasing interest in building wind farms brings another risk to both seabirds and marine mammals in the North Sea. Wind farms are not allowed in the Nature Conservation Area, but some have already been established and others are planned close to this area, and can, therefore, influence parts of the same populations that use both the offshore area and the tidal area. Off the northern part of the Danish Wadden Sea at Horns Rev, a 160 MW wind farm has operated since 2002 and a 200 MW wind farm was opened in 2009. Follow-up studies on the 160 MW wind farm have shown that bird species such as divers avoid the farm while common scoters occur there in smaller densities, gulls and terns occur in the same densities and cormorants in larger densities than in the surrounding waters. Birds on migration through the area initiate a change of their route by 3-4 km to avoid the wind park. Thus the parks influence the birds’ utilization of the offshore area, but up to now not seriously. However, the cumulative effects of more wind parks in the North Sea may aggravate the situation.

Currently, there are no indications of major geomorphological changes in the offshore zone, however, accelerated sea-level rise and altering sediment dynamics must be taken into account as probable causes of future changes. Upcoming coastal defence measures (including sand and gravel extraction and beach nourishment) might impact the natural sediment dynamics at least on a regional spatial scale.

Crustaceans, bivalves and polychaetes are the most important benthic organisms in the offshore zone. With respect to nutrition of seabirds, bivalves (mainly Spisula and Ensis) are of highest importance. Fish in the offshore zone are crucial for a variety of piscivorous seabird species. Breeding failures of several species currently indicate fundamental changes in availability and/or quality of fish. Among the seabird species, black-headed gull, common eider and herring gull as well as common scoter are most important. There are significant proportions of the respective biogeographic populations of common eiders, sandwich terns and lesser black-backed gulls in the offshore water of Germany alone. There is insufficient monitoring data to draw conclusions on biological changes.

It is strongly recommended to continue the monitoring program of birds in the offshore zone of the Wadden Sea that has been started by Schleswig-Holstein in 2004, and to extend it to Niedersachsen, Denmark and The Netherlands.

### 3.8 Estuaries

The estuaries constitute the part of the Wadden Sea in the worst ecological condition. Although the Wadden Sea estuaries are subject to many strong, human-induced pressures, the available monitoring data from TMAP is insufficient to prove any significant ecological change since the QSR 2004. On a longer time-scale, water quality in most estuaries has improved whereas many other characteristics show a declining quality.

Estuaries are tidal river mouths with a free water exchange with the sea. They are characterized by tidal brackish and freshwater areas forming the transition zone between rivers and high-salinity tidal waters. There are five such estuaries in the Wadden Sea Area with ‘open access’ to the Wadden Sea, namely the Varde Å in the Danish Wadden Sea Area, the Eider, the Elbe and the Weser in the German Wadden Sea Area, and the Ems in the German and Dutch Wadden Sea Area.

The estuaries are of high relevance for the Wadden Sea ecosystem because they are the pathways along which nutrients, toxic substances and silt from the rivers reach the Wadden Sea; and because they serve as migration, nursery and feeding areas for animals. On the other hand, the estuaries themselves are a specific habitat, characterized by strong variability and dynamics of key factors, such as salinity, tidal range, turbidity and others. From an ecological point of view, they are important for migrating species (in particular birds and fish), but additionally they are inhabited by various characteristic brackish-water and estuary-endemic species. The brackish salt-marsh vegetation along the shores produces more biomass than any other...
Figure 3.14: Changes in tidal range between 1880 and 2005 in the Eider (gauges Tönning and Friedrichstadt), Elbe (gauge Hamburg St. Pauli), Weser (gage Bremen Oslebshausen) and Ems (gage Herbrum) (5-year-running mean) (Schuchardt and Scholle, QSR 2009 Thematic Report No. 16).

salt marsh. With proper management, this attracts large numbers of ducks and geese.

Most of the river outflows (especially the smaller ones) in the Wadden Sea Area have sluices or storm surge barriers that prevent or reduce natural mixing of fresh and salt water and the establishment of transition zones. The estuaries of the rivers Elbe, Weser and Ems constitute the seaward access routes to the major German and Dutch sea ports and are among the most industrialized regions of the Wadden Sea Area. The industrial development along these rivers and their estuaries has resulted in significant alterations in morphology, hydrography (including tidal amplitude), flora and fauna, amongst others as a result of deepening of channels and embankment of river banks, including the resulting loss of brackish marshes. The increase of the tidal range of the estuaries (Fig. 3.14) may serve to illustrate the strong human influence on the state of the estuaries. A gradual increase reflects the ongoing narrowing and deepening, while the ups and downs at the Eider have been caused by barrage construction.

Large sections of the foreland and water areas of the estuaries have been designated as Natura 2000 sites, thus creating the basic conditions for sound ecological management. However, restoration of brackish marshes and meadows along the estuaries has so far not been achieved. That is also the case for tidal forests and marshes in the freshwater tidal part of the estuaries. On the other hand, loads of nutrients and several contaminants have been reduced during the past 20 years (see Figures 3.1, 3.3, 3.4). Water quality should be improved much more, however.

The ecological importance of the upper Ems estuary and especially its tidal freshwater reach has drastically deteriorated over the past 20 years. The water quality is affected in particular by a huge increase of suspended solids and by oxygen depletion. Consequently the aquatic fauna has strongly declined. These developments have occurred mainly as a result of deepening of the upper estuary for shipyard purposes. In addition, a storm surge barrier (also in use as a temporary tidal weir to enable passage of newly built ships) has been constructed; its effects have not been well studied.

During the past 20 years the Weser ecosystem has undergone fewer changes than that of the Ems. However, further deepening of the estuary has occurred and the resulting increase of the tidal amplitude is very large. The tidal freshwater reach of the Elbe estuary shows bad water quality (especially oxygen deficiency). High dredged volumes and further deepening of the fairway have further changed the ecological system. The Varde Å estuary has morphologically changed least, but its forelands have been subject to intensive agricultural exploitation for decades. Hence, a joint agricultural and environmental project for the extensive meadows around the estuary of Varde Å was initiated during the years 1998-2002, and extensification is now taking place in almost 2400 hectares of marshland.

Apart from the large estuaries there are few natural transitions between fresh and salt water left, such as several tributaries of the large estuaries. These should be conserved. Some progress has been made modifying sluice regimes, building fish passages and restoring brackish marshes, thus increasing the opportunities to develop habitats and species depending on natural transition zones.

All taken together, the estuaries constitute the part of the Wadden Sea with the worst ecological condition. It will require a huge effort to preserve, let alone to augment the ecological
values still remaining in and along the estuaries. Such an effort will no doubt be hampered by a tendency to further increase the draught of the vessels heading for the ports along the Ems, the Weser and the Elbe, requiring further deepening of the channels. Climate change will also affect the ecological situation in the estuaries due to changes in the freshwater flow regime, accelerated sea level rise, rising temperature and others. Because of the unrelatedness of these factors, measures will become necessary with respect to e.g. coastal defence. This may lead to additional impact on the estuarine ecosystem.

3.9 Fish

Few conclusions can be drawn on changes in fish populations since the QSR 2004 because the TMAP did not include a fish monitoring program. However, the inclusion of fish since the QSR 2004 is an important step in itself. Below is an analysis of the state of the Wadden Sea fish fauna based on various sources.

Based on a number of unrelated fish monitoring programs, the QSR 2004 described and assessed the temporal trends and spatial distribution of 20 fish species and the brown shrimp (Crangon crangon). Because of the unrelatedness of these monitoring programs, it underlined the need for a regular assessment of the fish fauna and formulated recommendations on management, monitoring and research. These were adopted in the recommendations of the 11th International Scientific Wadden Sea Symposium in Esbjerg (April 2005), and it was advised to include fish monitoring in the ongoing Trilateral Monitoring and Assessment Program (further indicated as TMAP) revision process. Following the Trilateral Ministers Conference 2005, a TMAP ad hoc expert group on fish monitoring was established in March 2006. For the first time, the QSR 2009 provided a comprehensive and harmonized analysis of the fish fauna of the entire Wadden Sea.

The Wadden Sea estuaries and rivers are subject to substantial anthropogenic pressures, which are reflected in the aquatic biotic communities and in the fish fauna in particular. Among the most relevant anthropogenic factors influencing the habitat conditions in river systems are dams, sluices, weirs and riverbed maintenance. In the estuaries, dredging and the disposal of dredged material, coastal protection and flood defence and the direct or diffuse input of substances from industry and agriculture are main threats. In the Wadden Sea proper, shrimp fishery and mussel culture also affect the fish fauna. Many fish migrate between the Wadden Sea and the North Sea. The latter is subject to increasing human impacts by shipping, exploitation of resources (gas and oil, sand and gravel), fishery and wind energy. Intermingled with the anthropogenic pressures that are exerted, natural variability plays a very important role.

Next to past overexploitation, the migrant (diadromous) fish currently seem to suffer most from bottlenecks in the upstream parts of (some) estuaries, where water quality is low and essential habitats are failing, resulting in some species (almost) missing (sturgeon, allis shad, salmon, houting) and low abundance of others (twainte shad, sea lamprey, river lamprey). Only sea trout, smelt, eel and flounder, although decreased in number, are more common in the estuaries. Unhindered migration for almost extinct species such as the houting and salmon, good water quality, suitable spawning habitats and favourable conditions for larval growth are essential to restore or maintain vital populations of diadromous fish in the estuaries and river systems in the Wadden Sea. Attempts to re-introduce the exterminated sturgeon have not been successful up to now. The houting belongs to the most endangered fish species of the Wadden Sea/North Sea and is a prioritized species under the EC Habitats Directive. Previously, it was common in the Wadden Sea Area and adjacent river systems, but today it is only found in the Danish part of the Wadden Sea Area (and maybe also in Schleswig-Holstein) and in certain adjacent rivers. The actual conservation status is unfavourable.

Most of the larger fish species occurring in the past, now are rare or even absent from the Wadden Sea. This applies in the first place to slowly reproducing species such as thornback ray, sting ray, and several species of small sharks. Their decline is probably related to the intensive demersal fisheries in the North Sea, since these species spend part of the year in the North Sea to visit the Wadden Sea, especially in summer. But cod and whiting have also decreased in the Wadden Sea; in this case there might also be a relationship with increased water temperatures in the North Sea due to global warming.

Flatfishes such as dab and sole showed very pronounced decreases in abundance in most of the sub-areas in the Wadden Sea and a similar trend occurred in I-group plaice (= plaice in their second calendar year of life), although this was masked in the current analysis by the still abundant presence of 0-group individuals that dominate the catches. The declining trend in I-group plaice abundance is reflected in the decrease in mean length of plaice in the western Wadden Sea.
An offshore shift in the spatial distribution of young plaice appeared to occur in the Dutch Wadden Sea in the 1990s, which is attributed primarily to increased summer temperatures. At the same time, a decrease in predation risk and competition in the offshore areas allowed the juvenile plaice to distribute more widely. The shift in distribution of juvenile plaice was also manifest in the German Wadden Sea. By comparing 1987 to 1991 and 2002 to 2006 abundance data, it could be demonstrated that the distribution of young plaice shifted from the 5-m-depth strata towards the deeper areas as well as from inshore areas towards the further offshore areas. This is an indication that, throughout the Wadden Sea, young plaice have either changed their preference towards deeper and more offshore areas or that an earlier exodus occurs. Whether it is caused by faster growth and/or differences in environmental conditions needs still to be proven.

The observed distribution shifts of juvenile flatfish indicate changed conditions in the Wadden Sea nursery, which may have become less favourable due to higher water temperatures during summer. Similar to the observed phenomenon in juvenile flatfish, brown shrimp also appear to have undergone a distribution shift to more offshore, and also to more northerly waters.

Increasing water temperatures have a positive effect on the occurrence of more southern species such as the anchovy. Exotic or alien fish species, introduced from outside the North East Atlantic seas, are still rare in the Wadden Sea.

The estuarine resident species, i.e. those species spending the major part of their life cycle in the Wadden Sea, are the least known and understood group, although of all fish species they may reflect the status and quality of the Wadden Sea ecosystem to the largest extent.

In contrast to the estuaries, there is no existing fish index or tool to assess the status of the Wadden Sea fish fauna. Some fish species are not adequately covered in the current monitoring programs. Although the number of fish species and the species composition seem to have remained fairly stable over the last decades, the abundance of several fish species has decreased to levels below the long-term average. The factors (natural or anthropogenic) causing these changes are still largely unknown.

3.10 Birds
Since the QSR 2004, nearly half of the breeding birds have continued their decreasing trends in parts of the Wadden Sea. For migratory birds, decreasing trends for several species have changed to stable or increasing numbers, especially for Arctic-breeding species. However, some bird species are still decreasing. There are some indications that overfishing, as well as insufficient large roosting and moulting areas affect numbers and distribution of migratory birds.

3.10.1 Birds in the Wadden Sea area
The Wadden Sea region is one of the most important breeding areas for birds in Western Europe, especially for those species connected to coastal areas such as beaches, salt marshes and polder areas with extensive grassland. Despite the large areas of these habitat types in the Wadden Sea, and despite these landscapes being considered as well conserved and protected, large numbers of the breeding bird species are decreasing, and some species will soon be on the edge of extinction from the Wadden Sea area.

For the migratory birds, the Wadden Sea is of outstanding importance, and is one of the most significant staging and wintering sites in the world. Between 10–12 million birds rest here during autumn, moulting their feathers after the breeding season and refuelling their fat reserves before flying further on to the Mediterranean Sea, to West Africa and for some even further to South Africa where they spend the winter. During spring they return to build up their body reserves for the flight to the breeding areas that stretch from Canada in the west over Iceland and Scandinavia to European Russia and Siberia in the east. This shows that birds from a huge area of the northern hemisphere depend on the Wadden Sea. Large
numbers of the migratory birds are supported by the tidal areas that constitute large and reliable feeding grounds.

The results for several of the breeding bird species show that the situation is critical. Large decreases are observed, and for several species this can probably be attributed to management of the Wadden Sea salt-marsh habitats. For the migratory species, decreases are also documented but, except for the mussel eating birds, these decreases can probably not be tied to conditions in the Wadden Sea habitats. However, some of the migratory species are also showing increases and these, together with some of the decreasing species, seem to be bio-geographical changes involving a much larger scale than the Wadden Sea.

3.10.2 Breeding birds
Since the QSR 2004, 13 species of breeding birds have continued their decreasing trends in many parts of the Wadden Sea, 8 species are increasing, and 7 species are stable. Many breeding bird species dependent on the salt-marsh areas and extensively managed grasslands are declining (Fig 3.16). Several reasons for the declines are mentioned, such as increased predation by foxes, effect of climate change (some species are also decreasing outside the Wadden Sea), and salt-marsh management. Several of the breeding wader species depend more or less on grazing or mowing of their breeding habitats. The monitoring results for the salt marshes show large areas that are left ungrazed and which are following the succession pattern to a climax stage dominated by tall plants. These habitat types are obviously not suitable for breeding wader species, and could contribute to their decreasing numbers. Increased summer floodings may also cause losses of fledglings.

Change of climate during recent years affects several bird species breeding near the shoreline.
and on the beaches. High water levels during the breeding season increase the risk of destroying bird nests and eggs, causing losses in recruitment. For several species these breeding failures cannot be prevented but for gulls and terns, artificial sand-fields or barge-vessels can be established as breeding sites or platforms.

The negative trends in some populations of breeding birds have become more dominant compared to the QSR 2004. These are most obvious in waders, in shellfish-eating species, and in beach-breeding species, and suggest that the conservation status of many species has become worse recently. The background to this decline is only partly known and is related to less favourable food availability, poor breeding performance, increased predation, and disturbance by outdoor recreations, the latter in the case of beach-breeding species. The impact of other factors, such as changes in salt-marsh management, climate change or changes in the ecosystem, is largely unknown yet.

3.10.3 Migratory birds
Since the QSR 2004, 14 species of migratory birds have decreased, 8 species have increased and 12 species show stable populations. A few years ago, the Arctic species generally showed decreasing trends, but several of these species have now stabilized (Fig. 3.17). The present results show that the species still declining are those breeding in North, Central and Western Europe. Except for...
the shellfish–feeding species these bird species do not show a common preference for the same habitat types, indicating that the causes are not to be found in the Wadden Sea ecosystem. The shellfish–feeding bird species have shown a long-term decline in The Netherlands due to intensive mussel and cockle fisheries. The mechanized cockle fishery was terminated in The Netherlands in 2004. Recently the blue mussel biomass has increased in The Netherlands. However, this has not stopped the decreasing trends for the shellfish–feeding species, indicating that other factors are probably involved.

The analyses of the migratory birds suggest that large-scale changes have taken place. During recent years several species arrive earlier and stay longer in autumn in the Wadden Sea area than in former years. Also, several species arrive earlier in spring from the winter areas and leave the Wadden Sea later than before. Species showing these changes in periods of occurrence are geese, ducks and waders, using quite different habitat types. These longer stays during autumn and spring could indicate an increased biomass due to a milder climate. For the Dutch Wadden Sea at least, a general increase in the winter biomass for macrozoobenthos was found. For the biomass in spring there are no trilateral monitoring results, but surveys in the Danish Wadden Sea show increasing macrozoobenthos biomass during recent years. This could support a longer stay for wader species during spring. The longer stay of most of these species gives no management problems, but in some areas the increasing goose numbers cause damage to farmers’ crops, especially during winter and spring. Since the goose numbers increase in all parts of the Wadden Sea region, a trilateral approach of goose management, such as proposed by the Wadden Sea Forum, is necessary.

It can be concluded that long-term trends for migratory birds reveal some improvement in the development of several species. Species which show an increasing trend have also increased in their overall flyway population. Species with decreasing numbers mainly breed in North, Central and Western Europe, many of them using inland polder areas and mussel beds for feeding in the Wadden Sea. There are some indications that overfishing, as well as insufficiently large roosting and moulting areas, affect numbers and distribution of migratory birds. A management concept should be developed on a species flyway scale and this should also take into account changes caused by climate conditions.

3.11 Marine mammals

Since the QSR 2004 the number of harbour seals in the Wadden Sea has increased strongly – by about 25%. Even stronger was the increase of the grey seal population, which almost doubled. Less is known about the harbour porpoise; numbers seem to be stable at least.

The harbour (or common) seal, the grey seal and the harbour porpoise are indigenous Wadden Sea species. Marine mammals, as top predators and often long-lived species, have an important indicative function for the quality of the Wadden Sea ecosystem. These species and other top predators (i.e. several bird species) that overlap in habitat needs, demand special attention. Because of their longevity and dependence both directly and indirectly on large areas, they can be vulnerable to disturbance and pollution.

In the years after the virus epidemics in 1988 and 2002, the population of the harbour seal has shown a rapid recovery. During coordinated flights in the entire Wadden Sea Area in 2008, a total of 20,250 seals was counted, the highest number ever counted during the moult season.

Grey seals have relatively recently re-colonized the Wadden Sea. Currently the species is regularly seen in all countries, including the Danish Wadden Sea area, which seems to be the last area to be colonized. The maximum number of grey seals counted during the moult in 2008 in the Wadden Sea and at Heligoland, was 2,224 animals.

 Estimates in 2005 of harbour porpoise numbers, for the total North Sea area, amount to 335,000 animals. The main concentrations seem to have shifted from the northern North Sea southwards. As porpoise may migrate into coastal waters and close to the Wadden Sea, numbers recorded have been strikingly augmented in the early 2000s. German studies show hot spots of abundance and frequency (Sylter Außentriff, Borkum Rifffgrund and the area north of Helgoland). Knobsände off Amrum and the island of Sylt show a relatively high population density of mother–calf groups (the suckling period of this species lasts approximately 8 months). It can be concluded that this area is important for rearing harbour porpoises.

The present conservation status of harbour seals, grey seals and harbour porpoises in the Wadden Sea Area is determined by several environmental factors, including disturbance as a result of various human activities (such as recreation, construction of offshore wind parks, fisheries, air traffic and some military activities).
and food availability. At present, the harbour seal population does not show any indication of density dependence.

Pollution is presently not a major issue for marine mammals in this area. At current levels the seal species do not seem to be affected in their population growth. Attention to possible new sources of pollutants should remain, however.

Though probably still not at the population level of around 1900, the harbour seal population has recovered well from the very low numbers observed in the mid-1970s after hunting was forbidden, and after the 1988 and 2002 epidemics. The total population size indicates that the present harbour seal population can be regarded as viable. Data are lacking to estimate the natural reproduction capacity directly, but comparison with harbour seal populations elsewhere leads to the conclusion that the reproduction capacity of the Wadden Sea harbour seal population is at a satisfying level. Still, juvenile mortality is relatively high (approx. 35% instead of 20–25%), despite the good protection of the main resting and nursing places.

For both the grey seal and the harbour porpoise, data are lacking to enable to assess whether the current stocks dependent on the Wadden Sea area are viable, or to adequately estimate the natural reproduction capacity. In both cases the current stocks seem strongly dependent on the stocks occurring elsewhere in the North Sea.

The numbers of grey seals and harbour seals observed in the Wadden Sea have increased over the past years. The question may arise whether and at what point the population may reach the carrying capacity of the area when biological regulating processes will occur (resulting in lowered reproduction and survival, a stagnating growth rate, increasing prevalence of parasites and diseases). General issues of concern with regard to marine mammals are increasing disturbance through noise (e.g. offshore wind farms) and disturbance (e.g. increase of unregulated recreational activities). In particular, insights into the cumulative effects of the various factors are lacking.
4. The Main Issues

The guiding principle “to achieve, as far as possible, a natural and sustainable ecosystem in which natural processes proceed in an undisturbed way” (Ministerial Declaration Esbjerg, 1991) is based on the observation that the present level of quality of the Wadden Sea is affected by ongoing disturbances and developments which interfere with the natural processes and threaten the sustainability. Therefore, a Trilateral Wadden Sea Plan (WSP Stade, 1997 and updated 2010) has been adopted with specified environmental targets. This is combined with a Trilateral Monitoring and Assessment Program (TMAP) which measures indicators of the actual status of the Wadden Sea ecosystem. Periodically, this status and the corresponding targets are compared in a Wadden Sea Quality Status Report. In the updated version of the Wadden Sea Plan an ecosystem approach is explicitly adopted and as overarching themes climate change, alien species and shipping safety are addressed. Below, the authors focus on some main issues with an outlook on possible long-term developments in the Wadden Sea region.

4.1. Maintaining a great natural heritage

The Dutch and German parts of the Wadden Sea Conservation Area have been given the rank of a World Heritage by the UNESCO World Heritage Committee in June 2009. This recognizes on a global level the outstanding natural values which are under excellent nature conservation management supported by a broad societal consensus. Compared to other coasts of the world which are also inhabited by highly developed agricultural and industrial societies, the geo-morphological shape and the ecological conditions of the Wadden Sea have been well preserved. Maintaining this high level of environmental quality for the coming generations would be a great achievement. The Wadden Sea’s most outstanding natural feature is the large extent of its intertidal sand and mud flats, interacting with adjacent salt marshes and beaches. This is its core value already expressed in its name, which implies that one can wade across this sea when the tide is out. Thus, maintaining the tidal area (intertidal and subtidal area) with its morphological dynamics and its food supply for the spectacular flocks of coastal birds deserves highest priority. The tidal area is sheltered by a sandy barrier against a rough North Sea. This furthers special living conditions, but many biota commute between the tidal area and the offshore zone in order to select the best opportunities, depending on season and life stage. On the landward side, the intertidal flats transcend into salt marshes and into estuaries. Birds especially commute between the intertidal flats for foraging and the salt marshes for breeding and resting, while many fish migrate into or through the estuaries. Offshore zone, sandy barrier islands, salt marshes and estuaries surround the tidal flat area and interact with it in many ways. Each habitat is essential for the functioning of the Wadden Sea ecosystem as a whole. However, these habitats are not as universally outstanding as the tidal flat area. In addition to natural habitats, there are also interactions with the neighbouring rural areas which are therefore partially integrated into management and monitoring.
Throughout its existence over the past 5,000 years, the tidal area has undergone considerable changes, with marshes advancing and retreating in line with the balance between sea level change and sediment supply. In the last millennium, human engineering increasingly impacted the landscape of the Wadden Sea. Following an early period of reclaiming and draining peat areas and embanking salt marshes, the intertidal area grew again because storm surges breached seawalls and flooded embanked marshes. Due to a subsiding land level, the intruding tidal waters could not be easily kept out again. Tidal flat areas in the westernmost Dutch Wadden Sea, Dollard, Jadebusen and in the Northfrisian region now extend where once an agriculturally exploited marshland had been. With advances in coastal defence, the size of the tidal area began to decrease again until land claim was halted, towards the end of the past century (Fig. 4.1). The cessation of claiming land from the sea was triggered by the fading need for more agricultural land and its economical feasibility in the European economy and at the same time by a growing appreciation of the natural values of the tidal area.

The changeable extent of the tidal area makes it impossible to derive objectively a reference size of the area from the past which could then serve as an environmental target. It is therefore best to set a target that the present-day size of the area should not be diminished. This is an important decision because sea level is expected to rise faster in the wake of global warming. Under the present rate of sea level rise most tidal flats and salt marshes seem able to keep pace with sea level rise. It is not known exactly to what extent natural sedimentation can compensate for the acceleration of the rising sea level to keep the size of the tidal zone constant. If a sediment deficit arises studies should explore how sand nourishments could compensate such a development and could contribute to maintaining the outstanding natural values. Spatial planning to adapt coastal zones to higher levels of the sea may include buffer zones which in addition to their purpose for defence could develop into zones of high natural value.

Targets for the tidal area in the Wadden Sea Plan do not refer to the size of the area per se but to “a natural dynamic situation in the tidal area” and “an increased area of geomorphologically and biologically undisturbed tidal flats and subtidal areas”. This implies that it is best to avoid disturbing the natural dynamics of the area by harmful activities – dredging and stabilizing channels, dumping sediments, changing natural erosion and sedimentation patterns or the seafloor level, by dredging or raking away biogenic structures or by removing organisms. Levels of turbidity, contamination and eutrophication should also be minimized.

Although to a casual observer the tidal area may appear to be OK, all the disturbances of the natural dynamics listed above are evident, as outlined in this report. To a large extent, these are concessions to human needs and rights in the area. The challenge for the future is to fulfil human requirements and still lower the level of interference with the natural dynamics. For example, instead of widening and deepening channels to accommodate the growing size of ferries which commute between mainland and islands, new types of ferries should be designed which do not
require expanded channels with larger ports and longer revetments. This would be a substantial contribution to improving natural sediment dynamics in the tidal area. As another example, the bottom cultures of the mussel fishery are supplied with so-called seed mussels which traditionally have been dredged after settlement as wild beds. Now, promising experiments are being conducted with collectors of young mussels. Such collectors are ropes or nets suspended above the bottom. Supply of seed mussels from such collectors could free the natural beds from recurrent dredging and their dynamics could proceed in an undisturbed way. Hopefully, other disruptions to the natural dynamics can eventually be resolved by ingenious inventions. There should be incentives and awards to promote such endeavours.

The targets for the tidal area to have more natural mussel beds, more worm reefs, more seagrass beds and favourable food availability for birds cannot be regarded as fulfilled. However, management may not be able to do much in these cases. The reasons for a lack of recovery are not clear enough to take immediate action and food shortages for shellfish-feeding birds may have to do more with climatic developments than the fishery. Present monitoring is largely confined to the intertidal part of the tidal area. This severely limits our understanding of population dynamics in many benthic species. More emphasis on the subtidal shallow areas and gullies is necessary in monitoring. To promote epibenthic biogenic habitats, more experimental research is needed. When touristic and military facilities began to invade the barrier islands of the Wadden Sea, many kinds of hard core defences were used to stabilize the shoreline positions. Some sandy beaches were partially displaced by artificial rocky shores. Thus, the use of sand nourishments were a great achievement. Sand sucked up at offshore source areas is carried to the shore by ship and pipeline. It is either directly sprayed upon eroding beaches or it is deposited in front of the beaches to protect the island shores. There is still a large potential for coastal defence with sand nourishments. For example, at Sylt the exposed beaches facing the North Sea are supplied every year with about one million m³ of sand to balance natural erosion. On its other side, where the island is facing the tidal area, beaches are still replaced by more hard structures (Fig. 4.2). These spoil the landscape and reduce natural biodiversity. Maintaining natural shores at barrier islands would require more sand nourishments rather than enforcing and extending hard structures of defence.

Salt marshes along the mainland coast are almost all of the artificial foreland-type. The natural salt marshes have disappeared with past embankments. Foreland grew at the expense of intertidal flats by means of sedimentation fields surrounded by brushwood groynes, combined with digging ditches for drainage. The original purpose of such land claim for agriculture has given way to coastal defence and conservation purposes since the 1970-80s. Forelands absorb wave energy which otherwise would hit the seawall. Except for a few sites, the present extent of foreland is regarded as sufficient. Occasionally, existing foreland is protected against erosion. Overall, a status quo between areas of foreland and intertidal flats is now maintained.
Estuaries as a whole are in a very bad shape. Small ones have either been closed with sluices or storm-surge barriers reducing tidal flow. Large estuaries have been converted into shipping channels for ever larger vessels. This increased the tidal range, caused silting up of side-arms, oxygen deficiencies at the bottom, a high load of suspended particles and it requires constant dredging. These problems are so severe that grand solutions have to be thought of – as radical as shifting port functions from inshore to offshore locations. Such a partial shift of port activities out of the estuaries and away from the shallow coast could release estuaries from the burden of accommodating incompatible functions. The estuaries should not be adapted to the growing size of vessels and the volume of trade. Rather, the mode of cargo transfer should be adapted to conserve the shape and form of the coast. Solutions should be sought to conserve the natural values rather than satisfy the immediate human need.

In conclusion, maintaining the great natural heritage of the Wadden Sea is a very challenging task. The current size of the intertidal zone cannot be taken for granted. Mitigating the level of interference with the natural dynamics of the tidal area requires innovative ideas. Maintaining barrier islands relies on proper ways to enhance artificial sand supply, while the unsustainable situation in the estuaries needs radically new solutions. Maintaining the natural heritage would require considerably more than conventional nature conservation and asks for a joint effort of all coastal agencies.

4.2. Healing the old wounds

The historical conversion of episodically flooded marshes and regularly flooded tidal flats into embanked agricultural land cut through the coastal gradient across which matter had been exchanged in natural processes between land and sea. There was no natural seaward growth of the tidal area, so this loss was not compensated for. In particular, brackish transitions between freshwater marshes and salt marshes, once common all along the mainland coast, are nowadays relegated to estuaries. Forelands are not relicts of former salt marshes but have been created in front of seawalls (see above). Forelands mostly look very different from natural salt marshes because of their parallel ditches, the vegetation grazed down to a lawn and a deviating species composition.

As a success of nature management, large artificial forelands are gradually developing towards a more natural state as brushwood groynes at sheltered localities go unrenewed, drainage ditches are neglected and livestock grazing pressure is reduced. Summer dikes have been removed at several locations to allow pasture land to revert to salt marsh meadows. The adopted policy and management is based on sound science and comprehensive monitoring. It has over the years advanced to a great success in regaining natural salt marsh vegetation and the associated fauna. This is a classic case of a win-win situation for coastal defence and nature conservation and is a path which should be continued.

Dunes on the Wadden Sea islands suffer from past stabilization programs. Where salt marshes
have developed in the shelter of such dunes, these also lack the influence of natural disturbances. This promotes ageing. Plant succession as such is a natural process. However, the dominance of late successional or climax-stages is a result of preventing or repairing physical disturbances such as strong winds and wash-overs. On some islands, trampling by visitors has introduced some small-scale disturbances that have remobilized drifting sand. For the sake of coastal protection, this has been stopped. Eutrophication, decreased grazing and invading bushes and trees have led to a more dense vegetation than there would have been under natural conditions. To restore more natural and dynamic states, a new and promising geo-ecological concept has been developed for barrier islands. This approach has still to gain more public support and needs to be fine-tuned to individual islands. It is a promising first step to reverse the degrading development of dune landscapes and back-barrier salt marshes. Re-introducing more dynamics on the barrier islands would also contribute to their long-term persistence (Fig. 4.3).

Coastal birds and their eggs were severely over-exploited when a large market for coastal products grew in the expanding cities within reach of the Wadden Sea region. A tipping point was reached at the onset of the 20th century. The sad condition of coastal bird populations was realized and sanctuaries for breeding colonies were secured. Finally, large-scale egg collecting and hunting ceased, together with control of chemical pollution. These initiatives have surely increased the colonial breeding bird species as gulls and terns and also spoonbill and cormorants are increasing. However, despite protection and conservation large parts of the breeding bird species are decreasing, and some species are about to get lost from the Wadden Sea area. A recently observed threat is the increasing number of floodings of salt marshes during the summer period when the fledglings can not yet fly, and are drowned. For the migratory species that especially rely on the huge areas of intertidal flats, large changes in numbers occur. However, except for the shellfish-feeding bird species, they do not show a common preference for the same habitat types, indicating that the causes for the changing numbers are not only to be found inside the Wadden Sea ecosystems, but rather in geographical ranges involving larger regions than the Wadden Sea area. The increasing goose numbers have in part resulted from successful conservation strategies, namely livestock grazing, and huge flocks of these big birds can be seen all over the Wadden Sea area.

Similarly, the recovery of seals after a ban on hunting, the avoidance of disturbances at resting and haul-out places, declining contaminants, together resulted in counts of about 20,000 harbour seals and about 2,000 grey seals in the past year (Fig. 4.4). Seal watching has grown into an important recreational activity and decreasing disturbance distances of seals facilitated this development. Two virus epidemics interrupted the recovery of harbour seals and highlighted that even the best management cannot protect against threats from outside.

There is still a large potential for habitat restoration and population recovery in the Wadden Sea. Among fish, only the houting in the Danish
part of the Wadden Sea and its tributaries received the benefit of a well-planned and comprehensive management to achieve a recovery. A good next candidate would be sturgeon which was fished to extinction in the estuaries of the Wadden Sea early in the last century. Reintroducing and protecting such a large and conspicuous fish would draw public attention to the poor state of fish populations in the Wadden Sea compared to what it could be. However, little can be done within the confines of the Wadden Sea unless fishery pressure is reduced in the North Sea.

In conclusion, important steps have been taken to reintroduce a more natural development for salt marsh and dune habitats. The recovery of seal populations is a great success, demonstrating that a consequent pursuit of the respective targets is the right way to go and should be extended to other old wounds as well.

### 4.3. Mitigating external disturbances

As with coastal regions in general, the Wadden Sea is wide open to external influences from both, the land and the sea. Eutrophication and pollutants have received much attention in the past and their mitigation is one major objective of the European Water Framework Directive. Riverine loads of nutrients are declining at a rate of about 2% per year. Compared to assumed background levels, the eutrophication status is still elevated in the tidal area, salt marshes and dunes of the Wadden Sea. There are apparent sub-regional differences and the signals differ for groups of phytoplankton, benthic macroalgae, turnover of organic matter and dominant grasses in the salt marshes and dunes. No alarming blooms of algae or of sediments turning anoxic up to the surface have been observed during the last decade. The question arises: how low should we go with the reduction of nutrient loads and contaminants? Pre-industrial conditions may be out of reach. Would the money needed to achieve such a target be used better to mitigate other threats? These are important questions which require comparisons between relevant impacts and consideration of their interactions in order to arrive at a sound decision.

Litter in the countryside has become a rare sight and much effort goes into recycling of garbage. By contrast, huge amounts of plastic packaging continue to spoil beaches after a storm. Particularly embarrassing is the high share of debris from fisheries. On a short stretch of coastline, one can easily find enough orange rubber gloves to model a dragon or a fisherman on the beach (Fig. 4.5).

Many fish and birds are migrating species for which threats have to be assessed at a scale larger than the Wadden Sea to identify the factor most limiting the populations. In fish, particularly in top predators, this is usually the fishery in the North Sea which would overrun any attempts of conservation within the Wadden Sea. In birds, hunting pressure along the migration routes and the breeding success in the Arctic or in Eastern Europe may often be crucial for population development. In such cases, more awareness of the fate of fish and birds has to be raised in the respective countries to influence international policies.

Raising more awareness is also required in the case of introduced alien species. Particularly in the epibenthos of the tidal area but also in dunes adjacent to housing estates, alien invasions have increased in the last couple of years to such an extent that aliens often predominate in biotic communities. They originate from distant coasts and have arrived directly by human carriers or indirectly when introduced to other European coasts from where secondary dispersal has brought them into the Wadden Sea. The latter has been by far the prevailing route of immigration. This highlights that preventative measures such as ballast water treatment, control of hull fouling, banning the use of exotic organisms in open aquacultures and seaside aquaria, can only be effective if all coastal countries implement adequate prevention according to international conventions. Parliaments of the Wadden Sea countries should be urged to ratify such conventions.
Once alien aquatic organisms have arrived, only immediate action has a chance to eradicate immigrants. Dispersal with the currents and broadcasting of vast numbers of spores or larvae severely limits the prospects of successfully controlling such invaders. Some invaders are poorly integrated into the food web and hence may affect the performance of the ecosystems. However, the main issue is an ongoing homogenization of coastal biota on a global scale. Successful universal invaders produce a growing similarity between distant biota which once had no species in common. This process has received little attention in the past because most of the introduced coastal organisms are small and inconspicuous. With the invasion of Pacific oysters, this has changed (Fig. 4.6). Wide intertidal flats will never be as before. A common management strategy on the issue of alien species is needed.

The Wadden Sea region is expected to be challenged by an accelerating rise in sea level. As this is a consequence of increasing greenhouse gas emissions, one could assume this region would be at the forefront of climate change mitigation. This is not the case. Power plants using fossil carbon particularly abound in the Wadden Sea region. Gas extraction amounts to 10 billion m³ per year in the Dutch Wadden Sea, and in the German part about two million tons of oil is extracted annually. There is no indication that this might become less in the coming years. Islands such as Sylt and Texel make no effort to reduce traffic with cars using combustion engines. This paradox may produce a rather bad image.

Although the Wadden Sea is supplied almost continuously with wind which could drive large numbers of wind turbines, the policy to keep wind turbines out of the Conservation Area is justified because of the high density of coastal birds and the importance of preserving an unspoiled land- and seascape in a touristic area. However, the adjacent rural areas accommodate one of the highest densities of wind turbines. The offshore area next to the Wadden Sea is planned to deliver as much as 20,000 to 25,000 MW per year from giant wind turbines by 2030. This industrial neighbourhood will inevitably entail a burden to the Wadden Sea and care is necessary to minimize the effects on the protected nature area. For example, effects of cable crossing through the conservation area should be minimized by bundling these on a single line.

In conclusion, for the wide open Wadden Sea external disturbances play a major role in the performance of the geo-ecosystem. Efforts over the past decades to reduce the influx of excess nutrients and contaminants have improved the ecological quality, but residual problems remain. No success has been achieved so far in stemming the amount of litter washed ashore. The implementation of international strategies is necessary to improve situations of migrating birds and fish. Fish migrating between the tidal area of the Wadden Sea and the North Sea are particularly under-represented in the ecosystem. This distorts the food web and thus ecosystem functioning. On the other hand, too many alien species are invading the Wadden Sea and international conventions to reduce their dispersal by human carriers are not yet implemented. Unlimited alien invasions are undermining efforts of restoring past diversity and are seriously changing the biotic composition in the ecosystem.
4.4. Adapting to global change

The Wadden Sea cannot be a museum in a changing world. Mean annual sea surface temperature has increased by 1.5°C within the past 25 years in the inner North Sea and the Wadden Sea. Rising temperature entails an increased frequency of mild winters and hot summers, more precipitation during winters and more weather extremes at any time of the year. In the shallow Wadden Sea, water temperature follows air temperature very closely and this is predicted to rise further by almost 2°C in the next decades. This corresponds to water temperatures now encountered on the French coast south of Brittany. Although the Wadden Sea and the Atlantic shores of France have many coastal species in common, there will still be a considerable change in species composition and abundances. The warmer stage will have a number of new actors and their interplay will be different from what we are used to.

To make predictions in this biotic realm is almost impossible. The speed of northward dispersal by southern species and genotypes may exhibit a wide range and we know almost nothing of specific dispersal rates under conditions of a rapid increase in temperature. From present observations, so-called mismatch phenomena between prey and predator will intermittently abound. More southern species will immigrate than Boreal species will leave the Wadden Sea. Introduced alien species often find themselves in a pole position because they originate in most cases from coasts warmer than the Wadden Sea. They may occupy niches before other species arrive by natural dispersal from adjacent southern regions. Compared to previous times, there will be a revolutionary rate of change in the coastal biota. Intensified monitoring will be necessary to keep track of these changes (Fig. 4.7). Otherwise we will lose any understanding of what goes on in the interplay of life and cannot explain the novel phenomena in the ecology of the Wadden Sea.

However, at the regional scale nothing can be done to mitigate this kind of change. The best precaution for not losing too many species and genotypes in a period of rapid change is to maintain or restore a wide spectrum of habitats. A more complex array of habitats will lower the chance of a loss in genetic diversity within populations, prevent competitive exclusion between species and extirpations of plants, prey and hosts by grazers, predators and parasites, respectively. Therefore, faced with climate change, efforts to prevent displacements of natural habitats and to restore degraded habitats deserve a high priority.

An expected rate of sea level rise in the order of one metre at the end of this century will presumably cause a much greater challenge to the Wadden Sea region than the mere change in temperature or precipitation. Sea level rise affects the safety of the people; may squeeze salt marshes; and may drown the intertidal flat zone in front of defended coastlines. It will raise the input of hydrodynamic energy and be followed by a loss of mud relative to sand and a loss of seagrass as sand waves arise in the tidal zone. The barrier islands will be affected most by erosion. In spite of these dim long-term prospects, one metre of sea level rise within a century is still in an order of magnitude where adaptations to the consequences seem possible.
Other than with weather or the outcome of multiple biotic interactions, sea level is reasonably predictable in the long term. This allows a careful planning of the adaptations, learning by experience, and most importantly, there is time to harmonize cultural, socio-economic and geo-ecological consequences. Probably the most difficult problem is that our society has not yet learned to cope with such slow but relentless changes – changes which demand timely adaptations so that subsequent generations will not be faced with more to do than they can handle.

The present coastal configuration is not sustainable. Large parts of the embanked land lie below sea level and cannot rise in concert with the sea. Salt marshes in front of the seawalls and in back-barrier position may, in large part, be adapted to rise with the sea. It is known that net surface elevation change (sedimentation minus compaction) of salt marshes depends on the position in the tidal basin, elevation, distance to the source of sediment input, and structure of the vegetation as affected by grazing. For tidal flats, the adaptation is very uncertain and may depend on the size and shape of tidal basins as well as a variable sediment supply from the adjacent North Sea. Keeping island shores in position will require more and more effort. Concepts such as the geo-ecological model of barrier islands (see paragraph 3.6.2) will be helpful.

In due time we should shift from online coastal defence, with its focus on strengthening seawalls and beaches, to a coast growing with the sea with a focus on sand nourishments from offshore to inshore and attempts to trap sediments behind seawalls for raising the surface of embanked land. Both parts of this strategy require spatial planning and learning by experience. For the islands and the tidal area, the aim is to keep them more or less as they are, while in the low-lying embanked mainland structural adaptations to survive hazards would be an option. Without such adaptations, the Conservation Area would risk losing its universally outstanding natural values, and the rural area would run an ever-higher risk of disaster if its protective seawalls were ever breached.

Sand nourishments should be done with the least possible energy demand or by tapping energy from offshore wind parks. Sand extraction should be limited to offshore areas. Sand should be supplied in a way that minimises interference with the natural sediment dynamics. At present there is insufficient knowledge as to how islands and the tidal area can be maintained with sand nourishments. This ought to be an area of research with high priority. Raising the level of embanked marshes may be even more challenging than finding proper strategies for sensible sand nourishments.

In conclusion, the inevitable change in species composition in the wake of global warming is best accommodated with a high diversity of habitats. This aspect is already sufficiently covered by the existing targets. Adaptation to the expected rise in sea level seems possible by sand nourishments at the barrier islands and in the tidal area. Without such gradual adaptations to the consequences of climate change, the Wadden Sea natural heritage is at risk in the long term.

4.5. Towards excellence in integrated management

Integrated management taking into account ecological, socio-economic and cultural values requires informed, involved and committed societies in the three Wadden Sea countries. Joining the forces of the Trilateral Wadden Sea Cooperation and the Wadden Sea Forum to represent the interests of the stakeholders promises to meet the challenges of the major issues, particularly the envisioned adaptations to global change. The UNESCO World Heritage nomination dossier for the Wadden Sea, the Wadden Sea Quality Status Report 2009, the insights and recommendations from the 12th Scientific Wadden Sea Symposium and the Wadden Sea Plan 2010 provide a sound basis for a common management approach towards solving the main issues. It has been proven successful to treat the Wadden Sea as a coherent system and to imbed the Conservation Area into a wider regional structure of the adjacent land and the Exclusive Economic Zones in the North Sea belonging to the Wadden Sea countries.

Accelerating sea level rise, increasing temperature and introduced alien species complicate the interpretation of signals received from indicators thought to be specific for certain targets. Warming seems to facilitate pelagic and benthic grazing pressure on phytoplankton, suppressing blooms which otherwise would indicate that nutrients are still at a level too high to tolerate. Increased benthic grazing pressure follows from invasive alien species, notably the Pacific oysters and American slipper limpets which have benefited from warming. Identifying effects caused by the mussel fishery is hardly possible any more because mussel recruitment is affected by warming and intertidal mussel beds are overgrown by Pacific oysters. Both warming and alien species contribute to an increasing number of species. High
species richness would otherwise have been taken as evidence of successful conservation management. The crux is that these rapid changes lower our understanding of the ecological system and increase the risk of misinterpreting indicators. The only way out is to intensify research and monitoring. Monitoring should be long term and at a large scale, e.g. that of the tidal basins between islands. This is a better way to quantify cumulative impacts of exploitation instead of the present ad hoc small-scale and short-term “research”.

Global warming inevitably entails sea-level rise, albeit with some time lag. However, breeding birds have recently faced higher summer floods on salt marshes than in the past. Moreover, there is already a rising high tide level in the German Bight which is higher than the global rate of mean sea level rise. This gives a foretaste of what may come under global temperature rise. Predictions on the magnitude of sea level rise until the end of this century are still unreliable, but the direction is not. Falsely assuming that sea level will not rise as predicted and thus rejecting adaptive measures may have more serious consequences than falsely assuming the reverse. Adaptations such as sand nourishments within tidal basins collide with the target of a natural dynamic situation. What is “natural” is hard to define under conditions of a global change triggered by anthropogenic greenhouse gas emissions (Fig. 4.8). Probably we have to relax the geomorphological target under these circumstances and focus on the main issue of not losing intertidal flats.

The overriding consequences of global change demand a more integrated approach to the targets than has been taken up to now. A more hierarchical approach may be considered to ease management decisions. More importantly, adaptations in the Wadden Sea region to cope with changing precipitation patterns and with sea level rise have effects on coastal defence and many cultural, social and economic values. These have to be considered alongside geo-ecological concerns. The Wadden Sea community has already started along this path but there is a tremendous challenge before us. Although sticking to the path will be difficult, doing so offers the prospect of successfully conserving the Wadden Sea’s sublime nature and wildlife, thereby making the region even more worthwhile to live in.
Figure 4.8: Well integrated management is required to meet multiple targets. The salt marsh (lower left) has received dredged sediment from an adjacent harbour site which is silting up. Construction of brushwood groynes for land claim disturb a seagrass bed (dark patch in centre), and in the shelter of these groynes, the introduced Spartina grass is spreading into the mud flat. Protecting natural values at such a shore will be a growing challenge when sea level rise accelerates in the coming decades. (Photo: K. Reise).
List of QSR 2009 Thematic Reports


Nickie Butt, Paul Wright, Natalie Vig, 2009. Harbors and Shipping. QSR 2009, Thematic Report No. 3.2


All QSR 2009 Thematic Reports are available as PDF download at:
http://www.waddensea-secretariat.org/TMAP/Monitoring.html
General Preamble

Nature conservation and management in the Wadden Sea should, as formulated in the trilateral Guiding Principle, aim "to achieve, as far as possible, a natural and sustainable ecosystem in which natural processes proceed in an undisturbed way". Much has already been achieved in recent decades but the Wadden Sea is still facing issues of concern such as retarded recovery of biological diversity, the loss of salt marshes, and ongoing contamination with new chemical substances. There is also the need to develop strategies to deal with the consequences of global developments such as climate change and invasive alien species. Finally, in terms of policy and management, there is an increasingly complex system of international, European and national legal instruments and agreements which can both lead to confusion and/or work at cross-purposes. Therefore, there is an urgent need for a better integration in research, monitoring and management with timely involvement and participation of all stakeholders (researchers from various disciplines, government agencies, NGOs and other sectors). A similar holistic and integrative approach should be applied when exploring possibilities for EU-funding.

The Twelfth International Scientific Wadden Sea Symposium discussed these issues under the title ‘Science for Nature Conservation and Management’. Given that the trilateral Wadden Sea Cooperation serves as an example in the wider European or even global context, the symposium considered the following recommendations to be of strategic importance for the three Wadden Governments.

Recommendations to the Trilateral Governmental Conference 2010

1. Develop one comprehensive scheme for the conservation and sustainable development of the trilateral Wadden Sea in order to implement the various EU Directives more effectively. Such a scheme will serve as an example for the wider EU. In this context it is important that:
   a. The trilateral Wadden Sea is considered as a sub-region according to the Marine Strategy Framework Directive and
   b. the definitions of "Good Ecological Status / Favourable Conservation Status / Good Environmental Status" as respectively required by the Water Framework Directive / Habitats and Species Directive and the Marine Strategy Framework Directive have to be harmonised to ensure that also the implementation of these Directives is harmonised.
   c. the Ecosystem Approach should be applied to Wadden Sea policy and management.
   d. we must build on existing trilateral structures, agreements and instruments, including monitoring and data handling.

2. Extend the trilateral cooperation area by adding the adjacent off-shore conservation areas, because there is a strong relationship between the Wadden Sea and these areas and treat the inshore and near offshore areas as a single system.
3. The monitoring efforts of the trilateral area should not be restricted to the minimum requirements resulting from the Natura2000, Water and Marine Strategy Framework Directives as these do not provide sufficient information for a proper and scientifically sound ecosystem management of the Wadden Sea. Accordingly, the TMAP should be expanded to develop trilateral strategies and methodologies for monitoring and assessing the ecological values of in particular the subtidal area. Furthermore, a large effort should be given to the development of conservation objectives which underpin the whole management process.

4. Where necessary and possible restore the natural structure and functioning both to increase resilience to the impacts of accelerating sea level rise and to enhance sustainable economic development, taking due account of geo-morphological conditions.

5. The natural landscape of the Wadden Sea and the cultural landscape of the adjacent land area must be regarded as complementary parts of the same landscape. Therefore cooperation between the cultural and environmental heritage should be improved.

6. Governments need to join and reinforce ongoing international efforts to prevent alien species introductions and develop an alien species management strategy for the Wadden Sea.
Annex 6

SYLT DECLARATION
and 2010 Joint Declaration

11th Trilateral Governmental Conference
on the Protection of the Wadden Sea,
Westerland/Sylt 18 March 2010
SYLT DECLARATION

Ministerial Council Declaration of the
Eleventh Trilateral Governmental Conference
on the Protection of the Wadden Sea
Westerland/Sylt, 18 March 2010

2010 Joint Declaration on the Protection of the Wadden Sea
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The Ministerial Council Declaration, the Sylt Declaration 2010, has been translated into Danish, German and Dutch. It is emphasized that the English version is the original one. The 2010 Joint Declaration which replaces the Joint Declaration signed at the 1982 Wadden Sea Conference in Copenhagen has been attached to the Ministerial Council Declaration. All conference documents are available from www.waddensea-secretariat.org
Opening of the exhibition at the Conference Center in Westerland/Sylt on 17 March 2010

(Photo: Martin Stock)
The 11th Trilateral Governmental Conference on the Protection of the Wadden was held on the German Wadden Sea island of Sylt on 17 – 18 March 2010 under the chairmanship of the German State Secretary Ursula Heinen-Esser. The Dutch and the Danish governments were represented by Minister Gerda Verburg and Minister Karen Ellemann.

In June 2009, the Dutch-German Wadden Sea was inscribed on the World Heritage List. The nomination has been a tremendous success and been embraced by the region. Denmark was not able to nominate its parts because of the ongoing process of establishing a national park for its Wadden Sea. The ministers agreed to start in the forthcoming period a possible nomination of the Danish Wadden Sea and the nomination of the Hamburg Wadden Sea National Park for inclusion on the World Heritage List.

A revised Wadden Sea Plan was also adopted. The 2010 Wadden Sea Plan updates the trilateral policies and management since the first Wadden Sea Plan was adopted at the 8th Conference in Stade in 1997. The Wadden Sea Plan constitutes the common framework for the protection and sustainable management of the Wadden Sea as an ecological entity.

In addition to agreements to enhance the international cooperation to protect the migratory birds, for which the Wadden Sea is a key site, climate change, sea level rise, coastal protection and alien species were high up on the minister’s agenda. Climate change and its consequences such as enhanced sea level rise, increased temperatures, and increasing sediment deficits will have impacts on the ecology and landscape of the Wadden Sea and may affect the safety of the inhabitants. It was agreed that there is a further need to strengthen the natural processes of the Wadden Sea in order to cope with such changes and to further cooperate in developing common strategies and enhancing the knowledge. For invasive species, which is an issue of concern for all parts of the Wadden Sea, a common approach will also be developed in the coming period.

Shipping safety was again on the agenda. It remains an issue which is of great concern for the region since an accident can have potentially enormous impact, ecologically and economically. It is of the highest priority that safety is kept on a high level and that everything is done to prevent accidents. The ministers agreed to a number of actions in this field including to continue to raise the awareness of the significance of the Wadden Sea amongst the maritime sector.
A highlight of the Conference was the signing of the 2010 Joint Declaration on the Protection of the Wadden Sea in a formal signing ceremony at the Kurhaus in Westerland. The 2010 Joint Declaration replaces the Joint Declaration, signed at the 1982 Wadden Sea Conference in Copenhagen, which had become progressively outdated. It will not alter the spirit or legal status of the Cooperation. This will remain a formal (but not legally binding) Cooperation between the governments of the three countries. In conjunction with the signing of the 2010 Joint Declaration new governance structures will be launched and replace the existing structures. The Trilateral Wadden Sea Board is the governing body of the Cooperation. Peter Ilsøe, Denmark, was appointed by the ministers as the first chairman of the Board.

The Sylt Conference introduced a new element into the Wadden Sea Conference. During the open session of the Conference an interactive discussion with the ministers, stakeholders and guests on "A Vision for the Wadden Sea – Steps to Achievement" was held. The overall objective for this session was to encourage all participants that they have a part to play in achieving the vision for the Wadden Sea. The session was moderated by Dr. Andy Brown who had earlier evaluated the Cooperation and had gained a considerable knowledge of the Cooperation. This session was much appreciated by the participants because it was felt that this was a central function of the Conferences: To obtain the good ideas and commitment of key stakeholders for the protection of the Wadden Sea, and a fruitful continuation of the Wadden Sea Cooperation.

Common Wadden Sea Secretariat
November 2010

The interactive discussion at the conference moderated by Mr. Andy Brown (Photo: Kristine Jung).
SYLT DECLARATION

Ministerial Council Declaration of the
Eleventh Trilateral Governmental Conference
on the Protection of the Wadden Sea

Westerland/Sylt, 18 March 2010
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## Sylt Declaration

Governance Wadden Sea Cooperation

Wadden Sea World Heritage

Nature Conservation and Management

Sustainable Use of the Wadden Sea

Landscape and Cultural Heritage

Climate, Sea Level Rise and Coastal Protection

Alien Species

Shipping and Ship’s Safety

Communication

Monitoring, Assessment and Scientific Research

Wadden Sea Forum

International Cooperation

Cooperation 2010 – 2013

Signatures
Ministers responsible for the protection of the Wadden Sea of the Netherlands, Denmark and Germany and representing their respective Governments in the Trilateral Wadden Sea Governmental Council on the Protection of the Wadden Sea on the island of Sylt;

Acknowledging the positive outcome of the evaluation of the Cooperation carried out since the 2005 Schiermonnikoog Wadden Sea Conference, confirming that the Cooperation is a pioneering model for the protection and management of a trans-boundary ecological system of international importance and the need for a continued effective Cooperation to conserve the Wadden Sea;

Appreciating the refreshment of the Joint Declaration on the Protection of the Wadden Sea and the Governance Arrangements;

Reaffirming the objective of the Joint Declaration 2010 to protect and manage the Wadden Sea as a single ecological entity shared by the three countries in accordance with the Guiding Principle for the Nature Conservation Area, which is to achieve, as far as possible, a natural and sustainable ecosystem in which natural processes proceed in an undisturbed way. This is done in the recognition that this can only be attained in cooperation with those who live, work and recreate in the area and are willing to endow its protection. Conditions for safety and sustainable development must be maintained;

Welcoming with appreciation the inclusion of the Dutch-German Wadden Sea on the UNESCO World Heritage List and thus the global recognition of its outstanding universal value;

Welcoming with appreciation the designation of the Danish Wadden Sea as a national park;

Appreciating the support and input of the Wadden Sea Forum and other stakeholder fora and the wider community for the protection and sustainable use of the Wadden Sea and to further sustainable regional development;
Recognizing the unique status of the Wadden Sea, notably in the Year of Biodiversity 2010 and its contribution to the biodiversity targets of the European Union, as well as the targets of the Convention of Biological Diversity;

Welcoming the Quality Status Report 2009, which provides a comprehensive overview of the status of the Wadden Sea and a valuable basis for developing appropriate policies and management initiatives;

Acknowledging the recommendations of the 12th International Scientific Wadden Sea Symposium for the further development of the protection and management of the Wadden Sea as an ecological entity;

Recognizing the improvements of the environmental and natural status of the Wadden Sea and the need to continue to act on specific areas to further improve the status of the Wadden Sea and expand the cooperation for the protection and management of the Wadden Sea, as outlined in the Policy Assessment Report;

Acknowledging the shared landscape and cultural heritage of the Wadden Sea Region.

Welcoming the international cooperation, in particular with West Africa, the Republic of Korea and The Wash/North Norfolk Coast to further the international protection of tidal areas and their biodiversity;

Concerned about the possible impacts from human uses, invasive alien species and particularly climate change;

Determined to meet these challenges and to continue to protect and manage the Wadden Sea for present and future generations;

and therefore share the view to:

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**Governance Wadden Sea Cooperation**

1. Authorize the Wadden Sea Board to commence its activities as the governing body of the Cooperation, to provide strategic and collective leadership and to ensure performance and accountability through good governance and good external relations and communication with all key stakeholders in accordance with Article 5 (2) of the Joint Declaration.

2. Appreciate the willingness of stakeholders to act as advisors to the Board.

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**Wadden Sea World Heritage**

3. Welcome the inscription of the Dutch-German Wadden Sea on the World Heritage List under natural criteria (viii), (ix) and (x) by decision of the UNESCO World Heritage Committee at its 33rd Session, Seville, June 2009 and acknowledge that the Statement of Outstanding Universal Value adopted by the Committee encompassing the current rules and regulations and management and enforcement activities governing the protection of the Wadden Sea constitutes the basis for the future protection and management of the property according to Article 155 of the Operational Guidelines.

4. Agree to start in the forthcoming period a possible nomination of the Danish Wadden Sea in accordance with encouragement of the World Heritage Committee and the nomination of the Hamburg Wadden Sea National Park including, where necessary and appropriate, minor boundary modifications for inclusion on the World Heritage List to complement the existing property.
5. Instruct the Board to initiate and organize the development of an overall Sustainable Tourism Development Strategy for the Wadden Sea World Heritage Site, in order to meet the request of the World Heritage Committee, the Hamburg Wadden Sea National Park, and the Danish National Park, pending formal approval by its forthcoming board, and as a first step to adopt a Wadden Sea Communication and Marketing Programme 2010-13.

6. Engage in a close cooperation with the African Eurasian Waterbird Agreement (AEWA) with a view to promote and strengthen cooperation on management and research on the African Eurasian Flyways with relevant state parties as requested by the World Heritage Committee and establish cooperation for the protection and management of migratory birds relying on the Wadden Sea.

7. Adopt the Wadden Sea Plan 2010 as elaborated in accordance with §6 of the Schiermonnikoog Declaration.

8. Acknowledge the broad spectrum of harmonisation already achieved within the tri-lateral cooperation and its value added, in particular with regard to monitoring and assessment at an integrated ecosystem level.

9. Focus future harmonisation efforts on high priority challenges, for example climate change, invasive non-native species, decline of birds, and on fisheries, in the national implementation of the Birds, Habitats, Water Framework and Marine Strategy Framework Directives.

10. Support the further development of integrated assessments and reporting in the framework of these Directives, including investigating the option of preparing a common integrated Natura 2000 Wadden Sea report.

11. Increase collaboration in relation to appropriate assessments under the Habitats Directive, and especially to exchange experience on the interpretation and application of site integrity, in combination effects and compensation measures.

12. Support the start of necessary further developments of the Wadden Sea Plan during the Danish presidency, e.g. regarding the harmonized application of European legislation and taking account of the preliminary recommendations of the High Level Review study on strategic elements.

13. Authorize the Board to develop and adopt a programme of projects and measures for the forthcoming period to support the implementation and further development of the Wadden Sea Plan with a view to strengthen and, where necessary, also restore the natural functioning of the Wadden Sea, incorporating the appropriate actions and activities of this Declaration.

14. Welcome the Guidance for Goose Management in the Wadden Sea Region as prepared under the leadership of the Wadden Sea Forum, in cooperation with the Trilateral Wadden Sea Cooperation, and declare their willingness to support the development of a Goose Management Plan in cooperation with relevant authorities, to achieve a balanced management to accommodate geese in the Wadden Sea region.

15. Reaffirm the guidelines concerning taking and releasing of seals from the Leeuwarden Declaration (§§60 and 61) and instruct the Board to update the Seal Management Plan, which will expire this year, for the period 2011 – 2016, based on an evaluation of the current Plan.
Sustainable Use of the Wadden Sea

16. Reaffirm the concept of sustainable use as defined by the Convention on Biological Diversity in protecting and conserving the ecological integrity of the Wadden Sea ecosystem, thus supporting lasting economic prosperity and social well-being.

17. Acknowledge promising developments of recent years towards sustainable fisheries, notably on shrimps and blue mussels, and ask the Board to develop Wadden Sea wide trilateral policy principles for a further development of sustainable fisheries, inter alia aiming at the consistent implementation of the Natura 2000 objectives, in close cooperation with the fisheries sector and nature NGOs.

Landscape and Cultural Heritage

18. Acknowledge that a comprehensive draft cultural landscape strategy has been developed in the framework of the LancewadPlan project. The cooperation on landscape and cultural heritage takes place to a large extent outside the Cooperation Area, for which the governments of The Netherlands, Germany and Denmark have declared their cooperation.

19. Request the Board to discuss and evaluate the draft strategy in order to decide together with the relevant regions upon whether or not parts of it may be accepted by the Trilateral Wadden Sea Cooperation.

20. Encourage the competent authorities to develop the accepted parts into a trilateral policy provided that the principles and policies of the Wadden Sea Plan are reflected.

Climate, Sea Level Rise and Coastal Protection

21. Concerned that climate change and its consequences such as enhanced sea level rise, higher storm surges, increased temperatures and increasing sediment deficits will have impacts on the ecology and landscape of the Wadden Sea and may affect the safety of the inhabitants.

22. Aware of the long time scales of the processes and reactions involved, and thus of the urgent need to strengthen natural processes, to continue mitigation activities and to start concrete measures for adaptation to the expected impacts of climate change in the Wadden Sea Area and to ensure the safety of the inhabitants of the region and the ecological integrity.

23. Aware that more knowledge is needed for adaptation and mitigation measures and therefore determined to improve the trilateral knowledge base and instruct the Board to

- Initiate a trilateral study on sustainable solutions to balance the expected sediment deficits on the basis of research questions specified by the CPSL.
• Initiate a project developing model spatial plans for pilot sites in the Wadden Sea region with the aim of developing a practicable spatial planning methodology to meet the challenges of climate change.

• Establish a working group focusing on increasing the adaptability of the Wadden Sea ecosystem and landscape to climate change, also responsible for coordinating and supervising the above studies.

24. Support the global and national efforts to mitigate causes of climate change at the regional level, by calling especially upon local and regional competent authorities and stakeholders, to work towards developing the Wadden Sea Region into a CO₂-neutral area by 2030 or before, putting the focus on the special threats for coastal zones by global warming and sea level rise.

### Alien Species

25. Support the ongoing international efforts to prevent and manage alien species introductions inter alia by ratifying the 2004 International Convention for Control and Management of Ships’ Ballast Water and Sediments (BWM Convention) as soon as possible, but in all cases not later than 2013 and instruct the Board to investigate the possibility to get involved in already ongoing ballast water projects covering the Wadden Sea (e.g. the Interreg Project “North Sea Ballast Water Opportunity”).

26. Instruct the Board to develop during the period until the next Ministerial Conference a common strategy for dealing with alien species introductions in the Wadden Sea, also taking account of the request of the UNESCO World Heritage Committee and the BWM Convention.

### Shipping and Ship’s Safety

27. Acknowledge the progress made in improving ship safety and reducing the environmental impact of shipping since the designation of the Wadden Sea Particularly Sensitive Sea Area (PSSA) in 2002 by the IMO and the improvements resulting from the implementation of the Schiermonnikoog Declaration.

28. Welcome all efforts to reduce air emissions and water pollution in shipping and in the harbours in the Wadden Sea Region by e.g. the introduction of environmentally friendly energy and logistic infrastructure (so called “Clean Shipping Approach”)

29. Recognize the importance of shipping to the Wadden Sea Region but also that it is necessary to continue to raise the awareness of the Wadden Sea as a PSSA and the ongoing efforts of the IMO and the EU to enhance the shipping safety and to reduce the environmental impact from shipping.

30. Coordinate and handle within the Trilateral Monitoring and Assessment Programme the collection of relevant shipping and environmental data for the Wadden Sea PSSA, taking into account existing data bases as SafeSeaNet in order to avoid additional effort.
31. Coordinate and intensify raising the awareness and education for the Wadden Sea PSSA and other relevant regulations to mariners and relevant stakeholders.

32. Establish within the already existing framework of the DenGerNeth Agreement the coordination mechanisms for issues related to the Wadden Sea PSSA.

33. Encourage the competent authorities to complete the entries concerning the Wadden Sea PSSA in charts.

34. Enhance the awareness of the shipping community for container losses and support relevant studies concerning prevention of the loss of containers.

35. Closely follow the steps and outcome of the project “Sub-regional risk of spill of oil and hazardous substances in the Baltic Sea (BRISK)” under HELCOM and to encourage the competent authorities to consider to transfer the experiences and the methodological approach accordingly to the North Sea, taking into account the objectives and requirements of the Marine Strategy Framework Directive.

36. Reaffirm the importance of shipping safety with respect to any offshore activity. The safety of shipping in the North Sea Area should be kept at least at the present level, irrespective of which kind of offshore development might occur, and where feasible be enhanced.

37. Instruct the Board to evaluate the interrelation and potential conflicts between the interests of shipping and wind energy production and their potential implications for the Wadden Sea ecosystem.

38. Instruct the Board to discuss the PSSA Evaluation Report and further steps of implementation with the relevant competent authorities and develop a vision on the impact of shipping and ship’s safety on the Wadden Sea PSSA.

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**Communication**

39. Convinced that the perception of and the identification with the Wadden Sea as a shared ecological and cultural heritage constitute an essential basis for a successful Wadden Sea protection in the long term, and therefore strengthen the communication about the Trilateral Wadden Sea and the Cooperation, in particular regarding the World Heritage Site and the Danish and Hamburg National Parks, by developing a trilateral communication strategy, which should include the activities of the International Wadden Sea School (IWSS), and enable the Common Wadden Sea Secretariat accordingly to fulfil these tasks.

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**Monitoring, Assessment and Scientific Research**

40. Aware that an acceleration of global change entails unprecedented effects on the geomorphology and biodiversity of the Wadden Sea ecosystem, and that in order to be able to cope with these changes, a joint interdisciplinary research agenda for the protection of natural values and the development of sustainable use perspectives in a changing world is needed.

41. Support the establishment of a trilateral research platform preferably directly connected with existing national networks. The platform will elaborate a trilateral agenda for policy-relevant research in consultation with the Board, based upon the QSR
analysis and the outcome of the scientific symposium, and initiate trilateral research projects, explore financing possibilities, and communicate the outcome with the Wadden Sea Board.

42. Reconfirm the central importance of the Trilateral Monitoring and Assessment Programme (TMAP), which was further revised to fit the requirements of relevant EC Directives as stipulated in the Schiermonnikoog Declaration, as the indispensable basis for the joint status assessment and the successful management of the Wadden Sea as a single ecological entity.

43. Reconfirm the continuation of TMAP and incorporate, as necessary, parameters to develop TMAP in order to facilitate an integrated assessment across the relevant EC Directives and better monitor new challenges, e.g. climate change and its impacts, and agree on a long term development strategy to increase its value to a wider range of stakeholders.

Wadden Sea Forum

44. Take into account the activities and recommendations by the Wadden Sea Forum on sustainable development and participatory processes, in particular with regard to

- The development of a sustainability indicator tool for the Region
- The further development of ICZM and marine spatial planning
- Future energy generation developments along and adjacent to the Wadden Sea
- Trilateral goose management
- The inscription of the Dutch-German Wadden Sea as a World Heritage site.

45. Support the cooperation with WSF as an independent stakeholder organisation for the period 2011-2013 with a focus on the elaboration of joint projects regarding integrated management and the protection of the Wadden Sea and welcome the mutual exchange of information, ideas and visions and acknowledge the function to act as a platform for developing conflict solutions.

International Cooperation

46. Welcome the aim of the OSPAR Ministerial Meeting 2010 to further develop the ecosystem approach for the Northeast Atlantic Ocean, as well their contribution to the further specification of the Good Environmental Status (GES) definition under the Marine Strategy Framework Directive, because both activities are highly relevant for the protection of the Wadden Sea, which is the world's largest tidal flat ecosystem and World Heritage site.

47. Offer to support these activities by contributing the extensive experience of the Wadden Sea states with integrated ecosystem management and sustainable human use in a transboundary context.

48. Continue the cooperation with Korea in the framework of the Memorandum of Understanding, concluded in 2009 with emphasis on information exchange and capacity building.
49. Acknowledge the ongoing cooperation with WWF WAMER for sustainable development of the West African Ecoregion, which plays a key role for migratory birds passing through the Wadden Sea.

50. Continue the exchange of information and experiences on the Wadden Sea and the Wash North Norfolk Coast with Natural England in the framework of the Memorandum of Intent, concluded in 1991.

Cooperation 2010 – 13

51. Thank Germany for chairing the Cooperation during a prolonged period of time.

52. Welcome the chairmanship of Denmark for the forthcoming period 2010 – 2013.

53. Hold the next Trilateral Governmental Conference on the Protection of the Wadden Sea and the regular Trilateral Governmental Council meeting in 2013 on the invitation of the Danish Government.


Signatures

Sylt, Germany, 18 March 2010.

For the Government of the Federal Republic of Germany

………………………………………………………..
Ursula Heinen-Esser, Parliamentary State Secretary

For the Government of the Kingdom of Denmark

………………………………………………………..
Karen Ellemann, Minister for the Environment

For the Government of the Kingdom of The Netherlands

………………………………………………………..
Gerda Verburg, Minister of Agriculture, Nature and Food Quality
After the signing of the Ministerial Council Declaration: Minister Gerda Verburg, State Secretary Ursula Heinen–Esser and Minister Karen Ellemann (from left to right, Photo: Martin Stock).
The Chairman of the Sylt Conference State Secretary Ms. Heinen-Esser and with the German delegation chaired by the German Senior Official Ms. Nickel (3rd and 4th from the right) (Photo: Kristine Jung).

Opening address by Minister Juliane Rumpf, Schleswig-Holstein (Photo: Martin Stock).
ERKLÄRUNG VON SYLT

Erklärung des Trilateralen Wattenmeer-Rates
(Ministererklärung)
Elfte Trilaterale Regierungskonferenz
zum Schutz des Wattenmeers

Westerland/Sylt, 18. März 2010
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ERKLÄRUNG VON SYLT

Die für den Schutz des Wattenmeeres zuständigen Ministerinnen und Minister der Niederlande, Dänemarks und Deutschlands als Vertreter ihrer jeweiligen Regierungen im Trilateralen Wattenmeer-Rat (Trilateral Wadden Sea Governmental Council) zum Schutz des Wattenmeeres auf der Insel Sylt;

In Anerkennung der positiven Ergebnisse der seit der Wattenmeerkonferenz 2005 auf Schiermonnikoog durchgeführten Evaluation der Kooperation, die bestätigt hat, dass die Kooperation ein wegweisendes Modell für den Schutz und das Management eines grenzüberschreitenden ökologischen Systems von internationaler Bedeutung ist und die Notwendigkeit besteht, die erfolgreiche Zusammenarbeit zur Erhaltung des Wattenmeeres fortzuführen;

In Würdigung der Aktualisierung der Gemeinsamen Erklärung zum Schutz des Wattenmeeres sowie der Strukturen zur Steuerung der Zusammenarbeit;

In Bekräftigung des Ziels der Gemeinsamen Erklärung 2010, das Wattenmeer als grenzüberschreitende ökologische Einheit im Einklang mit dem Leitprinzip für das Trilaterale Schutzgebiet zu schützen und zu managen, um so weit wie möglich ein natürliches und sich selbst erhaltendes Ökosystem zu erreichen, in dem natürliche Prozesse ungestört ablaufen können. Dies erfolgt in Anerkennung, dass dies nur in Zusammenarbeit mit den Menschen erreichbar ist, die in diesem Gebiet leben, arbeiten, sich erholen und gewillt sind, es zu schützen. Die Bedingungen für Sicherheit und nachhaltige Entwicklung sind zu erhalten;

In anerkennender Begrüßung der Aufnahme des deutschen und des niederländischen Teils des Wattenmeeres in die UNESCO-Liste des Welterbes und somit die weltweite Anerkennung seines außergewöhnlichen universellen Wertes;

In anerkennender Begrüßung der Ausweisung des dänischen Wattenmeeres als Nationalpark;

In Würdigung der Unterstützung und des Beitrags des Wattenmeerforums (Wadden Sea Forum) und anderer Interessengruppen sowie einer breiteren Öffentlichkeit für den Schutz und die nachhaltige Nutzung des Wattenmeeres und für die nachhaltige Entwicklung der Region;

In Anerkennung des einzigartigen Status des Wattenmeeres, insbesondere im Internationalen Jahr der Biologischen Vielfalt 2010, und seines Beitrags zu den von der Europäischen Union gesetzten Zielen zur biologischen Vielfalt sowie den Zielvorgaben des Übereinkommens über die biologische Vielfalt;

In Begrüßung des Qualitätszustandsberichts (Quality Status Report) 2009, der einen umfassenden Überblick über den Zustand des Wattenmeeres gibt und eine wertvolle Grundlage für die Entwicklung geeigneter Politiken und Managementmaßnahmen ist;
In Anerkennung der Empfehlungen des 12. Internationalen Wissenschaftlichen Wattenmeersymposiums für die Weiterentwicklung von Schutz und Management des Wattenmeeres als ökologische Einheit;

In Anerkennung der Verbesserungen der Umweltbedingungen und des natürlichen Zustands des Wattenmeeres und der Notwendigkeit weiterer Bemühungen in bestimmten Bereichen, um seinen Zustand weiter zu verbessern und die Zusammenarbeit zum Schutz und Management des Wattenmeeres auszubauen, wie im Politik-Bewertungsbericht (Policy Assessment Report) dargelegt;

In Anerkennung der gemeinsamen landschaftlichen und kulturellen Werte der Wattenmeer-Region;

In Begrüßung der internationalen Zusammenarbeit, namentlich mit Westafrika, der Republik Korea und The Wash/North Norfolk Coast, zur Förderung des internationalen Schutzes von Wattengebieten und ihrer biologischen Vielfalt;

In Besorgnis über die möglichen Auswirkungen von Nutzungen durch den Menschen, invasiver gebietsfremder Arten und insbesondere des Klimawandels;

In der Entschlossenheit, diesen Herausforderungen zu begegnen und den Schutz und das Management des Wattenmeeres zum Wohle heutiger und künftiger Generationen fortzusetzen;

stimmten überein:

Strukturen zur Steuerung der Wattenmeer Kooperation


2. die Bereitschaft der Interessengruppen zu würdigen, als Berater (Advisors) des Wattenmeer-Ausschusses zu fungieren.

Welterbe Wattenmeer

4. in der kommenden Arbeitsperiode die mögliche Anmeldung des dänischen Wattenmeeres im Einklang mit der Anregung des Welterbekomitees und die Anmeldung des Nationalparks Hamburgisches Wattenmeer zu beginnen, einschließlich, wenn erforderlich und angemessen, geringfügiger Grenzänderungen, zur Eintragung in die Liste des Weltkulturerbes, um das eingetragene Gebiet zu vervollständigen.


---

Naturschutz und Management


8. die bereits in weiten Teilen erzielte Harmonisierung innerhalb der Trilateralen Kooperation und ihren Mehrwert anzuerkennen, insbesondere im Hinblick auf die Umweltbeobachtung und Bewertung auf integrierter ökosystemarer Ebene.

9. die künftigen Harmonisierungsbemühungen in der nationalen Umsetzung der Vogelschutzrichtlinie, der FFH-Richtlinie, der Wasserrahmenrichtlinie und der Meeresstrategie-Rahmenrichtlinie auf vordringliche Herausforderungen zu konzentrieren, wie z. B. den Klimawandel, invasive gebietsfremde Arten, den Rückgang der Vogelbestände sowie auf die Fischerei.

10. die weitere Entwicklung integrierter Bewertungen und Berichterstattungen im Rahmen dieser Richtlinien zu unterstützen, einschließlich der Prüfung der Option, einen gemeinsamen, integrierten Natura 2000 – Bericht für das Wattenmeer zu erstellen.

11. die Zusammenarbeit bei der Durchführung von Verträglichkeitsprüfungen nach der FFH-Richtlinie zu verstärken, insbesondere Erfahrungen auszutauschen über die Auslegung und Anwendung der Bestimmung, dass ein Gebiet als solches nicht erheblich beeinträchtigt werden darf, im Hinblick auf Kombinationswirkungen und Ausgleichsmaßnahmen.


13. den Wattenmeer-Ausschuss zu ermächtigen, für die kommende Arbeitsperiode ein Programm mit Projekten und Maßnahmen zu entwickeln und zu verabschieden, um die Umsetzung und Weiterentwicklung des Wattenmeerplans zu unterstützen, mit
dem Ziel, natürliche Prozesse und Funktionen im Wattenmeer zu stärken und erforderlichenfalls auch wiederherzustellen. Dabei werden die geeigneten Maßnahmen und Aktivitäten dieser Erklärung berücksichtigt.


Nachhaltige Nutzung des Wattenmeeres

16. das Konzept der nachhaltigen Nutzung gemäß der Definition des Übereinkommens über die biologische Vielfalt erneut zu bestätigen, die ökologische Integrität des Wattenmeer-Ökosystems zu schützen und zu erhalten und so dauerhaften wirtschaftlichen Wohlstand und soziales Wohlbefinden zu unterstützen.


Landschaft und kulturelle Werte


20. die zuständigen Behörden zu ermuntern, die akzeptierten Teile zu einer trilateralen Politik zu entwickeln, unter der Voraussetzung, dass die Grundsätze und Politiken des Wattenmeerplans berücksichtigt werden.
Klimawandel, Meeresspiegelanstieg und Küstenschutz

21. die Besorgnis zu teilen, dass der Klimawandel und seine Folgen wie etwa der zunehmende Anstieg des Meeresspiegels, höhere Sturmfluten, erhöhte Temperaturen und ein zunehmendes Sedimentdefizit Auswirkungen auf die Ökologie und die Landschaft des Wattenmeeres haben werden und die Sicherheit der Bewohnerinnen und Bewohner gefährden können.

22. sich der Langfristigkeit der beteiligten Prozesse und Reaktionen und damit der dringenden Notwendigkeit bewusst zu sein, natürliche Prozesse zu stärken, Minderungsmaßnahmen fortzuführen und konkrete Maßnahmen zur Anpassung an die zu erwartenden Auswirkungen des Klimawandels im Wattenmeergebiet einzuleiten, und die Sicherheit der Bewohnerinnen und Bewohner dieser Region sowie die ökologische Integrität zu gewährleisten.

23. sich der Notwendigkeit profunderen Wissens für Anpassungs- und Minderungsmaßnahmen bewusst und daher entschlossen zu sein, die trilaterale Wissensbasis zu verbessern, und den Wattenmeer-Ausschuss zu beauftragen,
   • eine trilaterale Studie zu initiieren, um auf der Basis der von der Arbeitsgruppe Küstenschutz und Meeresspiegelanstieg (CPSL) entwickelten Forschungsfragen nachhaltige Lösungen zu finden, wie die zu erwartenden Sedimentdefizite ausgeglichen werden können,
   • ein Projekt zur Entwicklung modellhafter Raumordnungspläne für Pilotstandorte in der Wattenmeerregion einzuleiten mit dem Ziel, eine praxistaugliche Raumplanungsmethode zur Bewältigung der Herausforderungen des Klimawandels zu entwickeln,
   • eine Arbeitsgruppe einzurichten mit dem Schwerpunkt Erhöhung der Widerstandsfähigkeit des Ökosystems und der Landschaft des Wattenmeeres gegenüber Auswirkungen des Klimawandels, die auch für die Koordinierung und Überwachung der oben genannten Untersuchungen verantwortlich ist.

24. die globalen und nationalen Bemühungen zur Verminderung der Ursachen des Klimawandels auf regionaler Ebene zu unterstützen und hierzu insbesondere die zuständigen Stellen und Interessengruppen auf lokaler und regionaler Ebene aufzufordern, darauf hinzuarbeiten, die Wattenmeerregion bis spätestens 2030 zu einem CO₂-neutralen Gebiet zu entwickeln, wobei sich das Hauptaugenmerk auf die besondere Bedrohung der Küstenzonen durch die globale Erwärmung und den Meeresspiegelanstieg richtet.

Gebietsfremde Arten

25. die laufenden internationalen Bemühungen zu unterstützen, die Einwanderung gebietsfremder Arten zu verhindern und damit umzugehen, unter anderem durch die schnellstmögliche Ratifizierung des Internationalen Übereinkommens von 2004 zur Überwachung und Behandlung von Ballastwasser und Sedimenten von Schiffen (Ballastwasser-Übereinkommen), jedoch spätestens bis 2013, und den Wattenmeer-
Ausschuss anzuweisen, eine mögliche Beteiligung an bereits laufenden Ballastwasserprojekten im Wattenmeerraum zu untersuchen (z.B. das Interreg-Projekt „North Sea Ballast Water Opportunity“).


### Schifffahrt und Schiffssicherheit

27. den Fortschritt, der bei der Verbesserung der Schiffssicherheit und der Reduzierung der Auswirkungen der Schifffahrt auf die Umwelt erzielt wurde, seit die Internationale Seeschifffahrtsorganisation (IMO) im Jahr 2002 das Wattenmeer als besonders empfindliches Meeresgebiet (Particularly Sensitive Sea Area, PSSA) ausgewiesen hat, und die Verbesserungen infolge der Umsetzung der Schiermonnikoog-Erklärung anzuerkennen.

28. alle Bemühungen zu begrüßen, die Luftemissionen und Wasserverschmutzung in der Schifffahrt und in den Häfen der Wattenmeerregion zu reduzieren, z. B. durch die Einführung umweltfreundlicher Energie- und Logistikinfrastruktur (sogenannter “Clean Shipping Approach”).

29. die Bedeutung der Schifffahrt für die Wattenmeerregion anzuerkennen, aber ebenso die Notwendigkeit, weiterhin das Bewusstsein für das Wattenmeer als PSSA zu schärfen, wie auch die laufenden Bemühungen der Internationalen Seeschifffahrtsorganisation und der EU, die Sicherheit der Schifffahrt zu erhöhen und die Auswirkungen der Schifffahrt auf die Umwelt zu reduzieren.

30. die Sammlung relevanter Schifffahrts- und Umweltbereiche für das PSSA Wattenmeer im Rahmen des trilateralen Monitoring- und Bewertungsprogramms (TMAP) zu koordinieren und zu bearbeiten, wobei bestehende Datenbanken wie SafeSeaNet berücksichtigt werden sollen, um zusätzliche Arbeit zu vermeiden.

31. die Sensibilisierungs- und Aufklärungsbemühungen über das PSSA Wattenmeer und andere einschlägige Regelungen für Seeleute und Interessengruppen zu koordinieren und zu intensivieren.

32. im Rahmen des bereits bestehenden DenGerNeth-Abkommens zwischen Dänemark, Deutschland und den Niederlanden Koordinationsmechanismen für Fragen zum PSSA Wattenmeer einzurichten.

33. die zuständigen Behörden darauf hinzuweisen, die Einträge bezüglich des PSSA Wattenmeer in Seekarten zu vervollständigen.

34. das Bewusstsein der Schifffahrtindustrie für den Verlust von Containern zu erhöhen und entsprechende Studien zur Vermeidung von Containerverlusten zu unterstützen.

35. die Schritte und Ergebnisse des Projektes „Sub-regional risk of spill of oil and hazardous substances in the Baltic Sea (BRISK)“ unter dem Dach der HELCOM genau zu verfolgen und die zuständigen Behörden anzuhalten, die Erfahrungen und den methodologischen Ansatz entsprechend auf die Nordsee zu übertragen, wobei die Ziele und Anforderungen der Meeresstrategie-Rahmenrichtlinie zu berücksichtigen sind.

37. den Wattenmeer-Ausschuss zu beauftragen, die Wechselbeziehungen und potenziellen Konflikte zwischen den Interessen der Schiffahrt und der Windenergieproduktion und deren möglichen Auswirkungen auf das Ökosystem Wattenmeer zu bewerten.

38. den Wattenmeer-Ausschuss zu beauftragen, den PSSA-Evaluierungsbericht und weitere Umsetzungsschritte mit den zuständigen Behörden zu besprechen und eine Vision hinsichtlich der Auswirkungen der Schiffahrt und Schiffssicherheit auf das PSSA Wattenmeer zu entwickeln.

Kommunikation

39. in der Überzeugung, dass die Wahrnehmung des Wattenmeeres und die Identifizierung mit ihm als ein gemeinsames natürliches und kulturelles Erbe eine wesentliche Voraussetzung für einen langfristig erfolgreichen Wattenmeerschutz ist, die Kommunikation über das Trilaterale Wattenmeer und die Kooperation zu verstärken, insbesondere im Hinblick auf das Weltnaturerbegebiet und den dänischen und den Hamburgischen Nationalpark, durch Entwicklung einer Trilateralen Kommunikationsstrategie, in die auch die Aktivitäten der Internationalen Wattenmeerschule (IWSS) einbezogen werden sollen, und das Gemeinsame Wattenmeersekretariat in die Lage zu versetzen, diese Aufgaben zu erfüllen.

40. sich bewusst zu sein, dass eine Beschleunigung des globalen Wandels noch nie dagewesene Auswirkungen auf die Geomorphologie und biologische Vielfalt des Ökosystems Wattenmeer mit sich bringt und dass es einer gemeinsamen interdisziplinären Forschungsagenda zum Schutz der natürlichen Werte und der Entwicklung nachhaltiger Nutzungsperspektiven in einer sich verändernden Welt bedarf, um diesen Veränderungen begegnen zu können.


42. die zentrale Bedeutung des Trilateralen Monitoring- und Bewertungsprogramms (TMAP) erneut zu bestätigen, das, wie in der Erklärung von Schiermonnikoog festgelegt, zur Erfüllung der Anforderungen der relevanten EU-Richtlinien weiter überarbeitet wurde, als unverzichtbare Grundlage der gemeinsamen Zustandsbewertung und des erfolgreichen Managements des Wattenmeeres als ökologischer Einheit.
43. die Fortsetzung des TMAP erneut zu bestätigen, und gegebenenfalls Parameter zur Weiterentwicklung des TMAP aufzunehmen, um eine integrierte Bewertung aller relevanten EU-Richtlinien zu erleichtern und um neue Herausforderungen wie z. B. den Klimawandel und seine Auswirkungen besser überwachen zu können; außerdem eine langfristige Entwicklungsstrategie zu vereinbaren, um den Wert des TMAP für ein breiteres Spektrum von Interessengruppen zu erhöhen.

Wattenmeerforum

44. die Aktivitäten und Empfehlungen des Wattenmeerforums (WSF) zu nachhaltiger Entwicklung und Mitbestimmungsprozessen zu berücksichtigen, insbesondere im Hinblick auf
   - die Entwicklung eines Katalogs von Nachhaltigkeitsindikatoren für die Region
   - die Weiterentwicklung des Integrierten Küstenzonenmanagement (IKZM) und der Raumordnung im Bereich des Meeres
   - künftige Entwicklungen im Bereich der Energieerzeugung im Wattenmeer und in der angrenzenden Region
   - das trilaterale Gänsemanagement
   - die Eintragung des niederländisch-deutschen Wattenmeeres als Welterbestätte


Internationale Zusammenarbeit


47. die Unterstützung dieser Aktivitäten anzubieten und die umfangreichen Erfahrungen der Wattenmeerstaaten mit integriertem Ökosystemmanagement und nachhaltiger Nutzung im grenzüberschreitenden Kontext beizutragen.

48. die Zusammenarbeit mit Korea im Rahmen der 2009 geschlossenen Vereinbarung (Memorandum of Understanding) fortzusetzen mit den Schwerpunkten Informatiosaustausch und Kompetenzaufbau.

49. die bestehende Zusammenarbeit mit WWF WAMER zur nachhaltigen Entwicklung der westafrikanischen Ökoregion zu würdigen, die für die im Wattenmeer durchziehenden Zugvögel eine Schlüsselrolle spielt.

Kooperation 2010 – 2013


52. die Übernahme des Vorsitzes für die kommende Periode 2010 – 2013 durch Dänemark zu begrüßen.

53. die nächste trilaterale Regierungskonferenz zum Schutz des Wattenmeeres und die reguläre Sitzung des Trilateralen Wattenmeer-Rats im Jahr 2013 auf Einladung der dänischen Regierung abzuhalten.


Unterschriften

Sylt, Deutschland, 18. März 2010

Für die Regierung der Bundesrepublik Deutschland
Ursula Heinen-Esser, Parlamentarische Staatssekretärin im Ministerium für Umwelt, Naturschutz und Reaktorsicherheit

Für die Regierung des Königreichs Dänemark
Karen Ellemann, Ministerin für Umwelt

Für die Regierung des Königreichs der Niederlande
Gerda Verburg, Ministerin für Landwirtschaft, Natur und Lebensmittelqualität
The Dutch delegation with the Minister Gerda Verburg and her Senior Official Mr. Hendrik Oosterveld (3rd and 4th from right) (Photo: Kristine Jung).

Welcome address of Minister Gerda Verburg at the opening of the Sylt Confernce (Photo: Martin Stock).
VERKLARING VAN SYLT

Verklaring van de Ministerraad van de 11de Trilaterale Regeringsconferentie over de Bescherming van de Waddenzee

Westerland/Sylt, 18 mart 2010
Inhoudsopgave

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De Ministers van Nederland, Denemarken en Duitsland verantwoordelijk voor de bescherming van de Waddenzee en vertegenwoordigers van de respectievelijke regeringen in de Trilaterale Regeringsraad voor de Waddenzee over de bescherming van de Waddenzee op het eiland Sylt;

erkennen de positieve resultaten van de samenwerkingsevaluatie uitgevoerd sinds de Waddenzeeregeringsconferentie op Schiermonnikoog in 2005 en bevestigen dat de samenwerking een voortrekkersmodel is voor de bescherming en het beheer van een grensoverschrijdend ecosysteem van internationale betekenis en de noodzaak voor een blijvende effectieve samenwerking voor het behoud van de Waddenzee;

waarderen de vernieuwing van de Gezamenlijke Verklaring omtrent de bescherming van de Waddenzee (Joint Declaration) en de Bestuursregelingen (Governance Arrangements);

bevestigen opnieuw de doelstelling van de Gezamenlijke Verklaring van 2010 om de Waddenzee te beschermen en te beheren als een ecologische entiteit gedeeld door de drie landen volgens het grondbeginsel voor het natuurbeschermingsgebied (Guiding Principle for the Nature Conservation Area), nl. het voor zover mogelijk bereiken van een natuurlijk en duurzaam ecosysteem waarin natuurlijke processen ongestoord kunnen plaatsvinden. Dit alles in het besef dat dit alleen kan worden bereikt door samenwerking met de mensen die in het gebied wonen, werken en recreëren en bereid zijn een bijdrage te leveren aan de bescherming van het gebied. De voorwaarden voor veiligheid en duurzame ontwikkeling moeten worden behouden;

verwelkomen met waardering de inschrijving van het Nederlands-Duitse deel van de Waddenzee op de Werelderfgoedlijst van UNESCO en daarmee de wereldwijde erkenning van de bijzondere universele waarde ervan;

verwelkomen met waardering de aanwijzing van de Deense Waddenzee als nationaal park;

waarderen de steun en bijdrage van het Wadden Sea Forum en andere fora van belanghebbenden en de bredere maatschappij voor de bescherming en het duurzaam gebruik van de Waddenzee en het bevorderen van duurzame ontwikkeling;

erken de unieke status van de Waddenzee, met name in het Jaar van de Biodiversiteit 2010, en haar bijdrage aan zowel de biodiversiteitsdoelen van de Europese Unie als aan de doelen van het Biodiversiteitsverdrag;

verwelkomen het Quality Status Report van 2009 wat een breed overzicht geeft van de toestand van de Waddenzee en een waardevolle basis biedt voor het ontwikkelen van passend beleid en beheersinitiatieven;

erken de aanbevelingen van het 12e Internationaal Wetenschappelijk Waddenzeesymposium voor het verder ontwikkelen van de bescherming en het beheer van de Waddenzee als ecologische entiteit;

erken de verbetering van het milieu en de natuurlijke toestand van de Waddenzee en de noodzaak te blijven handelen op specifieke terreinen om de toestand van de Waddenzee te verbeteren en de samenwerking uit te breiden voor de bescherming en het beheer van de Waddenzee als beschreven in het beleidsevaluatierapport (Policy Assessment Report);
erkennen het gedeelde landschappelijke en culturele erfgoed van het Waddengebied; 
verwelkomen de internationale samenwerking, in het bijzonder met West-Afrika, Korea en Engeland (The Wash/North Norfolk Coast) ter bevordering van de internationale bescherming van getijdengebieden en hun biodiversiteit; 

zijn bezorgd over de mogelijke invloed van menselijk gebruik, invasieve uitheemse soorten en vooral de verandering van het klimaat; 

zijn vastbesloten deze uitdagingen aan te gaan en de Waddenzee te blijven beschermen en beheren voor de huidige en toekomstige generaties; 

En zijn daarom gezamenlijk van mening:

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Bestuur Waddenzeesamenwerking

1. het Bestuur (Wadden Sea Board) te machtigen hun activiteiten als bestuurslichaam van de Samenwerking te starten, strategisch en gezamenlijk leiderschap te geven en te zorgen voor uitvoering en verantwoording door middel van behoorlijk bestuur en goede externe relaties en communicatie met alle belangrijke belanghebbenden in overeenstemming met Artikel 5 (2) van de Joint Declaration; 

2. de bereidheid van belanghebbenden te verwelkomen om op te treden als adviseur van het Bestuur; 

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Werelderfgoed Waddenzee

3. de inschrijving van het Nederlands-Duitse deel van de Waddenzee op de Werelderfgoedlijst volgens natuurlijke criteria (viii), (ix) en (x) bij besluit van Werelderfgoedcomité van UNESCO tijdens de 33ste vergadering in Sevilla in juni 2009 te verwelkomen en te erkennen dat de Verklaring van bijzondere universele waarde (Statement of Outstanding Universal Value) aangenomen door de Werelderfgoedcomité en die de huidige regels en beheers- en nalevingsactiviteiten omvat waaraan de bescherming van de Waddenzee moet voldoen de basis vormt voor de bescherming en het beheer van het erfgoed in de toekomst in overeenstemming met Artikel 155 van de Operationele Richtlijnen. 

4. af te spreken de komende periode voorbereidingen te treffen voor de mogelijke nominatie van het Deense deel van de Waddenzee in overeenstemming met de aanmoediging van het Werelderfgoedcomité en de nominatie van het Nationaal Park Waddenzee van Hamburg met inbegrip van kleine grensaanpassingen waar nodig en passend voor inschrijving ervan op de Werelderfgoedlijst om het bestaande erfgoed te complementeren. 

5. het Bestuur opdracht te geven een algemene Ontwikkelingsstrategie voor Duurzaam Tourismse voor het Werelderfgoedgebied Waddenzee op te zetten en te organiseren om tegemoet te komen aan het verzoek van het Werelderfgoedcomité, het Nationaal Park Waddenzee van Hamburg en het Deens Nationaal Park hangende de formele goedkeuring door het komend Bestuur en als eerste stap een Communicatie en Marketing Programma voor de Waddenzee 2010-2013 goed te keuren. 

6. nauwe samenwerking aan te gaan in het kader van de AEWA (African–Eurasian Waterbird Agreement) als verzocht door het Werelderfgoedcomité om de samenwerking met de relevante belanghebbenden inzake beheer en onderzoek van de Afrikaans-Eurazische vogeltrekroutes te bevorderen en te versterken en concrete samenwerking tot stand te brengen voor de bescherming en het beheer van trekvogels die van de Waddenzee afhankelijk zijn.
Natuurbescherming en beheer

7. het Wadden Sea Plan aan te nemen zoals uitgewerkt in overeenstemming met §6 van de Verklaring van Schiermonnikoog.

8. het brede spectrum aan harmonisatie te erkennen dat binnen de Trilaterale Samenwerking al is bereikt als ook de waarde die het toevoegt met name voor wat monitoring en beoordeling op geïntegreerd ecoseysteemniveau betreft.

9. harmonisatie-inspanningen in de toekomst te richten op uitdagingen die hoge prioriteit hebben, zoals de verandering van het klimaat, invasieve uitheemse soorten en visserij bij de nationale implementatie van de Vogel- en Habitatrichtlijnen en de kaderrichtlijnen voor Water en Mariene Strategie.

10. de verdere ontwikkeling van integrale beoordelingen en verslaglegging in het kader van deze richtlijnen te steunen, waaronder het verkennen van de optie om een gemeenschappelijk, geïntegreerd Natura 2000 rapport voor de Waddenzee voor te bereiden.

11. de samenwerking met betrekking tot passende beoordelingen voortvloeiend uit de vereisten van de Habitatrichtlijn te vergroten en vooral ervaringen uit te wisselen omtrent de interpretatie en toepassing van gebiedsintegriteit, effecten in combinatie en compensatiemaatregelen.

12. het aanvangen van de nodige verdere ontwikkelingen van het Wadden Sea Plan tijdens het Deens Voorzitterschap te steunen, bijvoorbeeld bij de geharmoniseerde toepassing van Europese wetgeving en rekening te houden met de voorlopige aanbevelingen van de evaluatiestudie (High Level Review) over strategische elementen.

13. het Bestuur te machtigen een programma van projecten en maatregelen te ontwikkelen en aan te nemen voor de komende tijd om de implementatie en verdere ontwikkeling van het Wadden Sea Plan te steunen met het oog op versterking en waar nodig ook het herstel van het natuurlijk functioneren van de Waddenzee waarin de passende acties en activiteiten van deze Verklaring zijn verwerkt.

14. de Richtlijnen voor Ganzenbeheer in het Waddengebied als voorbereid onder leiding van het WaddenForum samen met de Trilaterale Samenwerking te verwerken en hun bereidheid te verklaaren de ontwikkeling van een Ganzenbeheerplan te steunen in samenwerking met de relevante overheden om een evenwichtig beheer te bereiken om ganzen in het Waddengebied een plaats te geven.

15. de richtlijnen voor het vangen en uitzetten van zeehonden uit de Verklaring van Leeuwarden (§860 en 61) opnieuw te bevestigen en het Bestuur opdracht te geven het Zeehondenbeheerplan dat dit jaar afloopt te updaten voor de periode 2011-2016 op basis van een evaluatie van het huidige plan.

Duurzaam gebruik van de Waddenzee

16. het concept ‘duurzaam gebruik’ zoals gedefinieerd in het Biodiversiteitsverdrag bij de bescherming en het behoud van de ecologische integriteit van het ecoseysteem van de Waddenzee opnieuw te bevestigen waarmee blijvende economische welvaart en maatschappelijk welbevinden wordt ondersteund.

17. veelbelovende ontwikkelingen op het gebied van duurzame visserij uit de afgelopen jaren met name met betrekking tot garnalen- en mosselvisserij te erkennen en het Bestuur te vragen voor de hele Waddenzee trilaterale beleidsprincipes te ontwikkelen voor een verdere ontwikkeling van duurzame visserij onder meer gericht op
36 Verklaring van Sylt 2010

de consequente implementatie van de Natura 2000 doelen in nauwe samenwerking met de visserijsector en NGO’s die zich met natuur bezighouden.

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**Landschap en cultureel erfgoed**

18. te erkennen dat er in de kader van het project LancewadPlan een uitgebreide conceptstrategie voor het cultuurlandschap is opgezet. Samenwerking op het gebied van landschap en cultureel erfgoed vindt voor een belangrijk deel plaats buiten het Samenwerkingsgebied, waaraan de regeringen van Nederland, Duitsland en Denemarken hun medewerking hebben toegezegd.

19. het Bestuur te verzoeken deze conceptstrategie te bespreken en te evalueren om samen met de relevante gebieden te besluiten of delen daarvan al dan niet door de Trilaterale Samenwerking kunnen worden geaccepteerd.

20. de bevoegde autoriteiten aan te moedigen de geaccepteerde delen te ontwikkelen tot trilateraal beleid op voorwaarde dat het de uitgangspunten en het beleid van het Wadden Sea Plan weergeeft.

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**Klimaat, zeespiegelstijging en kustbescherming**

21. bezorgd dat de verandering van het klimaat en de gevolgen daarvan, zoals snellere stijging van de zeespiegel, hogere vloedgolven, hogere temperaturen en steeds toenemende sedimenttekorten invloed zullen hebben op de ecologie en het landschap van de Waddenzee en mogelijk de veiligheid van de bewoners in het gedrang kunnen brengen.

22. zich bewust van de lange tijdsduur van de processen en de bijbehorende reacties en dus ook van de urgente noodzaak de natuurlijke processen te versterken, mitigatieactiviteiten te blijven uitvoeren en concrete maatregelen te starten voor aanpassing aan de verwachte invloeden van klimaatverandering in het Waddengebied en de veiligheid van de bewoners van het gebied en de ecologische integriteit te garanderen.

23. zich bewust van het feit dat meer kennis nodig is voor aanpassings- en mitigatiemaatregelen en daardoor vastbesloten de trilaterale kennisstand te verbeteren en het Bestuur opdracht te geven om:

   • een trilaterale studie over duurzame oplossingen in gang te zetten om het verwachte tekort aan sediment weer in balans te brengen op basis van onderzoeksvragen opgesteld door de CPSL groep.
   • een project in gang te zetten voor het ontwikkelen van modellen voor ruimtelijke planning voor pilots in het Waddengebied met als doel een praktische methodologie te ontwikkelen voor ruimtelijke planning om de uitdagingen van klimaatverandering het hoofd te bieden.
   • een werkgroep op te zetten die zich richt op het vergroten van het aanpassingsvermogen van het ecosysteem van de Waddenzee en het landschap aan de verandering van het klimaat, en die ook verantwoordelijk is voor de coördinatie en het toezicht op voornoemde studies.

24. de wereldwijde en nationale inspanningen om de oorzaken van klimaatverandering op gebiedsniveau terug te brengen te steunen, met name door een beroep te doen op lokale en regionale bevoegde overheden en belanghebbenden om te werken aan
het CO₂ neutraal maken van het Waddengebied in 2030 of eerder, en zich vooral te richten op de bedreigingen voor kustzones door de opwarming van de aarde en zeespiegelstijging.

Uitheemse soorten

25. de huidige internationale inspanningen om de introductie van uitheemse soorten te voorkomen en beheersbaar te houden onder meer door zo snel mogelijk, maar in geen geval later dan 2013, het in 2004 opgestelde Verdrag voor de controle en het beheer van ballastwater en sedimenten (BWM Convention) te ratificeren en het Bestuur opdracht te geven de mogelijkheid te onderzoeken voor deelname aan lopende ballastwaterprojecten die betrekking hebben op de Waddenzee (zoals het Interreg Project North Sea Ballast Water Opportunity).

26. het Bestuur opdracht te geven om in de periode tot aan de volgende Ministersconferentie een gemeenschappelijke strategie te ontwikkelen voor het aanpakken van de introductie van uitheemse soorten in de Waddenzee, ook rekening houdend met het verzoek van de Werelderfgoedcomite van UNESCO en het ballastwaterverdag.

Scheepvaart en scheepsveiligheid

27. de vooruitgang te erkennen die is gemaakt in de verbetering van de scheepsveiligheid en het terugbrengen van milieueffecten van de scheepvaart sinds het IMO in 2002 de Waddenzee als Particularly Sensitive Sea Area (PSSA, bijzonder kwetsbaar zeegebied) heeft aangewezen en de verbeteringen die het gevolg zijn van de implementatie van de Verklaring van Schiermonnikoog.

28. alle inspanningen te verwelkomen om de uitstoot naar de lucht en vervuiling van het water in de scheepvaart en in de havens in het Waddengebied terug te brengen door bijvoorbeeld de introductie van milieuvriendelijke energie en logistieke infrastructuur (de Clean Ship Approach).

29. het belang van de scheepvaart voor het Waddengebied te onderkennen maar ook de noodzaak mensen meer bewust te maken van de Waddenzee als PSSA en van de inspanningen van het IMO en de EU om de scheepvaart veiliger te maken en de milieueffecten van de scheepvaart terug te brengen.

30. het verzamelen van de relevante scheepvaart- en milieugegevens voor de Waddenzee PSSA in het Trilaterale Monitorings- en Beoordelingsprogramma (TMAP) te coördineren en verwerken met inachtneming van de bestaande gegevensbestanden als SafeSeaNet om dubbel werk te voorkomen.

31. de bewustwording van en voorlichting over de Waddenzee als PSSA en andere relevante regelgeving te coördineren en te intensiveren voor schippers en andere relevante belanghebbenden.

32. binnen het bestaande kader van de DenGerNeth Overeenkomst de coördinatiemecanismen op te zetten voor kwesties die met de Waddenzee als PSSA te maken hebben.

33. de bevoegde autoriteiten aan te moedigen de gegevens over de Waddenzee als PSSA op kaarten aan te brengen.
34. de bewustwording van de scheepvaartgemeenschap omtrent het verlies van containers te vergroten en relevante studies over hoe verlies van containers kan worden voorkomen te ondersteunen.

35. de stappen en resultaten van het Brisk project (Sub-regional risk of spill of oil and hazardous substances in the Baltic Sea) onder de Verklaring van HELCOM nauwgezet te volgen en de bevoegde autoriteiten aan te moedigen te overwegen de ervaringen en methodologische aanpak dienovereenkomstig over te dragen naar de Noordzee rekening houdend met de doelstellingen en eisen van de kaderrichtlijn Mariene Strategie.

36. het belang van de veiligheid voor schepen met betrekking tot alle offshore-activiteiten opnieuw te bevestigen. De veiligheid voor schepen in het Noordzeegebied moet op z’n minst op het huidige niveau blijven, en waar haalbaar verhoogd, ongeacht welke ontwikkeling aan offshore-activiteit zich ook mag voordoen.

37. het bestuur opdracht te geven het onderlinge verband en de mogelijke conflicten tussen de belangen van de scheepvaart en windenergieproductie in kaart te brengen en wat dat zou kunnen inhouden voor het ecosysteem van de Waddenzee.

38. het Bestuur opdracht te geven om het PSSA evaluatierapport en de verdere stappen ter implementatie met de relevante bevoegde autoriteiten te bespreken en een visie te ontwikkelen over de invloed van scheepvaart en scheepsveiligheid op de PSSA Waddenzee.

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**Communicatie**

39. ervan overtuigd dat de perceptie van en de identificatie met de Waddenzee als gedeeld ecologisch en cultureel erfgoed een wezenlijke basis vormt voor het succes van lange termijn bescherming van de Waddenzee en dus de communicatie over de Trilaterale Waddenzee en de Samenwerking te versterken, vooral met betrekking tot het Werelderfgoedgebied en de Nationale Parken van Hamburg en Denemarken door een trilaterale communicatiestrategie te ontwikkelen, waaronder de activiteiten van de Waddenzeeschool (IWSS) zouden moeten vallen en op die manier het Waddenzeesecretariaat in staat te stellen deze taken te vervullen.

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**Monitoring, beoordeling en wetenschappelijk onderzoek**

40. zich bewust van het feit dat een versnelling van wereldwijde verandering ongekende effecten heeft op de geomorfologie en biodiversiteit van het ecosysteem van de Waddenzee, en dat, om deze veranderingen het hoofd te bieden, een gezamenlijke en interdisciplinaire onderzoeksagenda noodzakelijk is om in een veranderende wereld de natuurlijke waarden te beschermen en duurzame gebruiksperspectieven te ontwikkelen.

41. het opzetten van een trilateraal onderzoeksplatform te steunen dat bij voorkeur rechtstreeks gelieerd is aan bestaande nationale netwerken. Het platform zal in overleg met het Bestuur een trilaterale agenda uitwerken voor beleidsrelevant onderzoek,
gebaseerd op het Quality Status Report en de uitkomst van het wetenschappelijk symposium, en trilaterale onderzoeksprojecten in gang zetten, financieringsmogelijkheden verkennen, en de uitkomst bekendmaken aan het Bestuur.

42. het centrale belang van het Trilaterale Monitorings- en Beoordelingsprogramma (TMAP) dat verder aangepast is om tegemoet te komen aan de voorwaarden van de desbetreffende EG Richtlijnen als bepaald in de Verklaring van Schiermonnikoog opnieuw te bevestigen als onontbeerlijke basis voor de gezamenlijke beoordeling van de toestand van de Waddenzee en een geslaagd beheer van de Waddenzee als ecologische entiteit.

43. de voortzetting van het TMAP opnieuw te bevestigen en waar nodig parameters op te nemen om het TMAP te ontwikkelen teneinde een geïntegreerde beoordeling voor alle relevante EG Richtlijnen mogelijk te maken en nieuwe uitdagingen, zoals klimaatverandering en de invloed hiervan, beter te kunnen monitoren, en een ontwikkelingsstrategie voor de lange termijn overeen te komen waarmee de waarde voor een bredere groep belanghebbenden wordt vergroot.

Waddenzee forum

44. rekening te houden met de activiteiten en aanbevelingen van het Wadden Sea Forum voor wat betreft duurzame ontwikkeling en inspraak met name op het gebied van
- de ontwikkeling van een duurzaamheidsindicator voor het Waddenzeengebied
- de verdere ontwikkeling van ICZM (Integrated Coastal Zone Management) en mariene ruimtelijke ordening
- toekomstige ontwikkelingen in energieopwekking in en langs de Waddenzee
- trilateraal ganzenbeheer
- de inschrijving van het Nederlands-Duitse deel van de Waddenzee op de Werelderfgoedlijst.

45. de samenwerking met WSF als onafhankelijke belanghebbende partij in de periode 2011-2013 te ondersteunen met het oog op de uitwerking van gezamenlijke projecten met betrekking tot geïntegreerd beheer en de bescherming van de Waddenzee en de uitwisseling van informatie, ideeën en visies te verwelkomen, en de functie te erkennen om als platform op te treden voor het ontwikkelen van oplossingen in conflictsituaties.

Internationale samenwerking

46. het doel van de OSPAR Ministeriële Vergadering 2010 te verwelkomen om de ecosysteem benadering voor het noordoostelijke deel van de Atlantische Oceaan verder te ontwikkelen, evenals de bijdrage van de Vergadering aan de nadere invulling van het Good Environmental Status (GES) concept uit de kaderrichtlijn voor Mariene Strategie, omdat beide activiteiten uiterst relevant zijn voor de bescherming van de Waddenzee, ’s werelds grootste waddenecosysteem en Werelderfgoedgebied.

47. aan te bieden deze activiteiten te steunen door bij te dragen met de ruime ervaring van de Waddenzeelanden met geïntegreerd ecosysteembeheer en duurzaam menselijk gebruik over de grenzen heen.
48. de samenwerking met Korea in het kader van de Memorandum of Understanding uit 2009 voort te zetten, vooral wat betreft het uitwisselen van informatie en het opbouwen van capaciteit.

49. de samenwerking met WWF voor duurzame ontwikkeling van de West-Afrikaanse Mariene Ecoregio (WAMER) te erkennen, die een belangrijke rol speelt voor trekvogels die het Waddengebied aandoen.


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**Samenwerking 2010 – 2013**

51. Duitsland te bedanken voor haar langdurige voorzitterschap van de Samenwerking.


53. de volgende Trilaterale Regeringsconferentie over de bescherming van de Waddenzee en de reguliere vergadering van de Trilaterale Regeringsraad in 2013 te houden op uitnodiging van Denemarken.


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**Ondertekening**

Sylt, Duitsland, 18 maart 2010

Namens de regering van Bondsrepubliek Duitsland
Ursula Heinen-Esser, Parlementair-Staatssecretaris in het Ministerie van Milieu, Natuurbescherming en Nucleaire Veiligheid

Namens de regering van het Koninkrijk Denemarken
Karen Ellemann, Minister van Milieu

Namens de regering van het Koninkrijk der Nederlanden
Gerda Verburg, Minister van Landbouw, Natuur en Voedselkwaliteit
Meeting of the Ministerial Council (Photo: Martin Stock).
The Danish delegation chaired by Minister Karen Ellemann (Photo: Kristine Jung).
SILD-DEKLARATIONEN

Det Trilaterale Vadehavsråd
11. Trilaterale Regeringskonference
om Vadehavets Beskyttelse

Westerland/Sild, 18. marts 2010
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Vi, de ansvarlige ministre for Vadehavets beskyttelse i Nederlandene, Danmark og Tyskland, og som repræsenterer de tre regeringer i Det Trilaterale Vadehavsråd,


Bekræfter, at formålet med "Fælleserklæringen 2010" for de tre lande fortsat er at beskytte og forvalte Vadehavet som én samlet økologisk enhed i overensstemmelse med Det Vejledende Princip for forvaltningen af Det Trilaterale Naturbeskyttelsesområde. Princippet er så vidt muligt at opnå et naturligt og bæredygtigt økosystem, hvor de naturlige processer forløber uforstyrret. Dette gennemføres i erkendelse af, at det kun kan opnås i et samarbejde med de mennesker, der lever og arbejder i området, de der bruger området i fritiden – samt de der er villige til at bidrage til områdets beskyttelse. Sikkerheden for befolkningen og en bæredygtig udvikling skal opretholdes.

Hilser det meget velkommen, at det nederlandske og det tyske Vadehav er blevet optaget på UNESCO’s verdensarvsliste og dermed har opnået global anerkendelse for områdets estuærende universelle værdi – samt at det danske Vadehav er blevet udpeget som nationalpark.


Vedkender sig Vadehavets estuærende status som naturområde, navnlig i relation til "Biodiversitetsåret 2010" – samt dets bidrag til EU’s målsætninger for biodiversiteten og målsætningerne i Biodiversitetskonventionen.

Hilser rapporten om "Vadehavets miljøtilstand" fra 2009 velkommen. Den giver et omfattende indblik i Vadehavets natur- og miljøtilstand, og den tjener samtidig som et

Anerkender forbedringerne af Vadehavets miljø- og naturtilstand og behovet for en fortsat målrettet indsats med henblik på yderligere at forbedre denne tilstand. Anerkender endvidere behovet for at udvide samarbejdet om beskyttelsen og forvaltningen af Vadehavet, som det er skitseret i rapporten ”Status over og anbefalinger til den fælles vadehavspolitik”.

Anerkender de fælles landskabsværdier og kulturarven i Vadehavsregionen.

Hilser det internationale samarbejde velkommen, navnlig med Vestafrika, Sydkorea og med de engelske kystområder the Wash og North–Norfolk Coast for at fremme den internationale beskyttelse af tidevandområder og dess biodiversitet.

Er bekymrede over de mulige påvirkninger fra menneskelige aktiviteter, fra invasive og fremmede arter samt især fra klimaforandringerne.

Er fast besluttede på at imødegå disse udfordringer og fortsætte med at beskytte og forvalte Vadehavet til gavn for den nulevende og de kommende generationer.

### Styring af Vadehavssamarbejdet

1. Bemyndiger vadehavsbestyrelsen, som ansvarligt organ for styringen af Samarbejdet, til at påbegynde sine aktiviteter, til at tilvejebringe et strategisk og kollektivt lederskab samt sikre ansvarlighed og resultater. Dette skal ske gennem god forvaltningspraksis, gode eksterne relationer samt kommunikation med alle væsentlige interessenter – i overensstemmelse med Fælleserklæringens artikel 5, stk. 2.

2. Værdsætter, at interesseorganisationer har indvilget i at fungere som rådgivere for bestyrelsen.

### Vadehavet som Verdensarvsområde

3. Hilser det velkommen, at UNESCO's Verdensarvskomité på sit 33. møde i Sevilla i juni 2009 besluttede at optage det nederlandske og tyske Vadehav på verdensarvslisten i henhold til naturkriterierne (viii), (ix) og (x).

Anerkender samtidigt, at ledetråden for beskyttelsen af Vadehavet er komitéens erklæring om områdets enestående universelle betydning sammen med de eksisterende regler, forvaltningspraksis og håndhævelsesprocedurer. Erklæringen vil udgøre grundlaget for den fremtidige beskyttelse og forvaltning af det udpegede område i henhold til artikel 155 i UNESCO's ”Operationelle retningslinjer”.


5. Anmoder bestyrelsen om at iøvrsætte og organisere udarbejdelsen af en overordnet udviklingsstrategi for en bæredygtig turisme (1) for verdensarvsområdet med henblik på at leve op til anmodningen fra Verdensarvskomiteen, (2) for delstaten Hamburgs Nationalpark i Vadehavet og (3) for den danske nationalpark i Vadehavet. Sidstnævnte


Naturbevaring og forvaltning


10. Støtter videreudviklingen af en højere grad af ensartethed i vurderinger og afrapporteringer inden for rammerne af disse direktiver; herunder at undersøge mulighederne for at udarbejde et fælles EU Natura 2000-bidrag for Vadehavet.

11. Forstærker samarbejdet om analyser og vurderinger inden for rammerne af habitatdirektivet og navnlig udvekslingen af erfaringer vedrørende udlægninger af projekters og planers påvirkninger af områdets integritet samt iværksættelsen af kompenserende foranstaltninger.


Bæredygtig udnyttelse af Vadehavet

16. Stadfæster principippet om en bæredygtig udnyttelse, som det er defineret i Biodiversitets-konventionen for (1) at beskytte og bevare Vadehavets økologiske integritet og (2) at sikre den økonomiske fremgang og befolkningens trivsel.


Landskab og kulturarv


20. Opfordrer de kompetente myndigheder til at udvikle de accepterede dele til en egentlig trilateralt politik, forudsat at de afspejler principper og politikker i Vadehavsplanen.

Klima, havspejlsstigning og kystbeskyttelse


22. Er bevidst om de lange reaktionstider i processerne, som skyldes klimaændringer. Er tillige bevidst om nødvendigheden af (1) at styrke de naturlige processer og iværksætte forbyggende foranstaltninger og (2) at tage konkrete skridt til at øge Vadehavsområdets tilpasning for at imødegå de forventede forandringer (3) at garantere befolkningens sikkerhed i Vadehavsregionen samt (4) at sikre den økologiske integritet.

23. Er bevidst om, at øget viden er nødvendig for at foretage disse tilpasninger og for at iværksætte forebyggende foranstaltningerne. Er derfor fast besluttet på at forstærke den trilaterale viden og anmoder derfor bestyrelsen om:

- At tage initiativ til en trilateral undersøgelse om bæredygtige løsninger for at opveje det forventede sedimentunderskud i Vadehavet - med udgangspunkt i de spørgsmål, som er rejt af den trilaterale arbejdsgruppe om "kystbeskyttelse og havspejlsstigning" (CPSL).
• At iværksætte et projekt om udvikling af en model for fysisk planlægning i pilotområder i Vadehavsregionen, som indeholder en anvendelig metodik, der lever op til klimaændringerernes udfordringer.

• At nedsætte en arbejdsgruppe, som skal fokusere på at øge økosystemets og landskabernes evne til at tilpasse sig klimaændringerne. Arbejdsgruppen skal samtidig være ansvarlig for koordination og overvågning af ovennævnte undersøgelse og projekt.


30. Vil koordinere og forvalte indsamling af relevante skibsfarts- og miljødata for PSSA-Vadehavet inden for det trilaterale overvågningsprogram (TMAP). For at undgå dobbeltarbejde tages hensyn til de eksisterende databaser så som "SafeSeaNet".

31. Vil koordinere og øge forståelsen for udpegningen og undervisningen af PSSA-Vadehavet samt andre relevante bestemmelser over for safolk og relevante interessenter.

### Invasive arter


### Skibsfart og sejladsfiskerheden


30. Vil koordinere og forvalte indsamling af relevante skibsfarts- og miljødata for PSSA-Vadehavet inden for det trilaterale overvågningsprogram (TMAP). For at undgå dobbeltarbejde tages hensyn til de eksisterende databaser så som "SafeSeaNet".

31. Vil koordinere og øge forståelsen for udpegningen og undervisningen af PSSA-Vadehavet samt andre relevante bestemmelser over for safolk og relevante interessenter.
32. Vil etablere procedurer for koordination af spørgsmål i forbindelse med PSSA- Vadehavet inden for de eksterne rammer af DenGerNeth-aftalen.

33. Opfordrer de kompetente myndigheder til at færdiggøre indtegningen af PSSA-Vadehavet på søkart.

34. Vil øge skibsforts opmærksomhed på tab af containere og understøtte relevante studier om forebyggelse heraf.

35. Følger udviklinger og resultater i "BRISK-projektet" under HELCOM og opfordrer de kompetente myndigheder til at overveje at overføre erfaringer og metodevalg til Nordsøen under hensyntagen til formålene og bestemmelserne i EU's havstrategidirektiv.

36. Bekræfter, at sejlads sikkerheden er et vigtigt spørgsmål i forhold til enhver offshore-aktivitet. Sejlads sikkerheden i Nordsøen bør (1) som minimum fastholdes på det nuværende niveau, uanset hvilken form for offshore-udvikling, der måtte finde sted og (2) om muligt skærpes.

37. Anmoder bestyrelsen om at evaluere sammenhængen og de sandsynlige konflikter mellem safartens interesser og produktionen af vindenergi samt de mulige konsekvenser for Vadehavets økosystem.


Kommunikation


Overvågning og forskning

40. Er bevidste om, at de hastigt stigende, globale forandringer medfører hidtil usete påvirkninger af landskaberne og biodiversiteten i Vadehavets økosystem. For at håndtere disse forandringer er der behov for en fælles strategi for tværfaglig forskning med henblik på at beskytte de naturlige værdier og på at udvikle perspektiver for en bæredygtig anvendelse.

41. Støtter oprettelsen af et trilateralt forskningsforum, fortrinsvis med direkte tilknytning til eksisterende nationale netværk. Forummet skal i samarbejde med bestyrelsen udarbejde en trilateral dagsorden for relevant forskning, som skal udgøre grundlaget for den kommende vadehavspolitik. Det skal ske med udgangspunkt i statusrapporten om "Vadehavets miljøtilstand 2010" (QSR) og resultaterne fra den videnskabelige

42. Genbekræfter den centrale betydning af Det Trilaterale Overvågningsprogram (TMAP), som er yderligere revideret for at leve op til kravene i de relevante EU-direktiver, som det blev præciseret i Schiermonnikoog-deklarationen. Heri er TMAP fremhævet som et uundværligt grundlag for den fælles analyse og vurdering af Vadehavets natur- og miljøtilstand og for en vellykket forvaltning af Vadehavet som én samlet økologisk enhed.

43. Genbekræfter fortsættelsen af TMAP og vil indarbejde parametre til at udvikle TMAP for – om nødvendigt (1) at imødekomme en integreret vurdering af natur- og miljøtilstanden på tværs af de relevante EU-direktiver og for (2) at sikre en forbedret overvågning i forbindelse med f.eks. klimaændringerne og følgevirkningerne heraf. Aftaler desuden en langsigtet strategi for at øge kendskabet til TMAP i forhold til en bredere kreds af interessenter.

44. Tager Vadehavsforums aktiviteter og anbefalinger i betragtning vedrørende en bæredygtig udvikling, især med hensyn til:

- Udviklingen af bæredygtige indikatorer for Vadehavsregionen.
- Videreudviklingen af en integreret kystzoneforvaltning (ICZM) og den fysiske havplanlægning.
- Udviklingen af de fremtidige energiproducerende anlæg i Vadehavsregionen.
- Udviklingen af en trilateral gåseforvaltning.
- Indskrivningen af det tysk-nederlandske vadehav som verdensarvsområde


46. Hilser målsætningen fra OSPAR-ministermødet i 2010 velkommen, som er (1) at videreudvikle forvaltningen af det nordøstlige Atlanterhav med udgangspunkt i økosystemets tarv, og (2) at fremme bidraget til opnåelse af "god økologisk status" i henhold til havstrategi-direktivet. Begge aktiviteter er yderst relevante for beskyttelsen af Vadehavet, som er verdens største økosystem af tidevandsflader - og delvist verdensarvsområde.

47. Tilbyder, at støtte disse aktiviteter ved at bidrage med vadehavslandenes store erfaring inden for integreret økosystemforvaltning og bæredygtig udnyttelse i et grænseover skridende kystområde.

49. Anerkender det igangværende samarbejde med WWF-WAMER om en bæredygtig udvikling af Den Vestafrikanske Økoregion, som spiller en central rolle for de trækfugle, der passerer gennem Vadehavet.


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### Vadehavssamarbejdet 2010–13

51. Takker Tyskland for at have varetaget formandskabet for Samarbejdet i en forlænget periode.

52. Hilser Danmark velkommen som formand for perioden 2010-2013.


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### Underskrifter

Sild, Tyskland, den 18. marts 2010

På vegne af regeringen i Forbundsrepublikken Tyskland
Ursula Heinen-Esser, Parlamentarisk Statssekretær

På vegne af regeringen i Kongeriget Danmark
Karen Ellemann, Miljøminister

På vegne af regeringen i Kongeriget Nederlandene
Gerda Verburg, Minister for Landbrug, Naturbeskyttelse og Fødevarekvalitet
The conference excursion “Through the Wadden Sea Plan” – a walk to the ultimate summit (Photo: Martin Stock).
2010 JOINT DECLARATION ON
THE PROTECTION OF THE
WADDEN SEA

Working together to meet present
and future challenges

Westerland/Sylt, 17 March 2010
Contents

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Annex 1 Wadden Sea Area and Nature Conservation Area ................................ 63
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2010 JOINT DECLARATION ON THE PROTECTION OF THE WADDEN SEA

Working together to meet present and future challenges

THE GOVERNMENTS of the Kingdom of Denmark, the Federal Republic of Germany and the Kingdom of the Netherlands:

REALISE that the Wadden Sea, encompassing the coastal zone from Den Helder in the Netherlands to Blåvands Huk in Denmark, is an exceptional ecosystem of world importance, and also together with its cultural landscapes, is a shared responsibility of the three countries;

RECALL their Joint Declaration in 1982 to cooperate on the Protection of the Wadden Sea, and the many achievements of their cooperation and in particular the high level of nature protection and wise management unprecedented throughout Europe for a transboundary wetland especially with regard to legal protection, harmonised targets, common policy and management, integrated monitoring and assessment procedures and involvement of civil society;

CONSCIOUS that the precious ecosystem of the Wadden Sea and its remarkable biodiversity deserves world class conservation measures;

CONSCIOUS ALSO of the unique landscape and cultural heritage of the Wadden Sea, which complements the natural heritage, and on which an extensive cooperation has developed;

REALISE that the Wadden Sea is an area where people live, work and recreate and whose interests and benefits are an integrated part of our common policy;

RECOGNISE that the safety of inhabitants from flooding must be secured through appropriate coastal defences;

NOTE that since their 1982 Joint Declaration the Wadden Sea has benefited from a comprehensive national and international nature conservation regime, including protection under European legislation, in particular the Birds and Habitats Directives and the Water
Framework Directive and that there is a need to further coordinate and harmonise their efforts to ensure effective and consistent implementation of these obligations;

ACKNOWLEDGE the progress which has been made on other issues related to the protection of the Wadden Sea including the designation of a number of National Parks and Biosphere Reserves, education and the sustainable development of the Wadden Sea Region, and the designation by the International Maritime Organization (IMO) as a Particularly Sensitive Sea Area (PSSA) because of its vulnerability to damage by international maritime activities;

AWARE of the many present and future challenges to the protection, restoration and sustainable use of the Wadden Sea, in particular the long term impacts of pollution, climate change and sea level rise and the loss of biodiversity and of the necessity of raising awareness for these challenges on the basis of this declaration;

CONCERNED to ensure that further progress is made in restoring the natural ecosystem functions, improving water quality, integrating cultural and landscape heritage, and reducing the negative environmental impacts of developments;

RECOGNISE the need to continue to enhance their efforts to protect and conserve the Wadden Sea as an ecological entity and its landscapes and cultural heritage and to promote Integrated Coastal Zone Management;

RECOGNISE ALSO the essential need for active support and involvement of all relevant stakeholders in the future protection and management of the area;

REAFFIRM their intention to consolidate the existing cooperation between the States in consultation with the other governmental bodies involved, and to continue to manage the Wadden Sea as a single ecological entity for its natural, landscape and cultural heritage values, for the benefit of present and future generations.

SHARE THE VIEW ON THE FOLLOWING

1. Geographical Area of Cooperation

1.1 The participating Governments have previously identified a Wadden Sea Cooperation Area and within this a Nature Conservation Area as the geographical basis of their Cooperation:

- The Wadden Sea Cooperation Area in short ‘Wadden Sea Area’:
  - the area seaward of the main dike, or where the main dike is absent, the spring-high-tide waterline, and in the rivers, the brackish water limit;
  - an offshore zone 3 nautical miles from the baseline as fixed nationally or where the Nature Conservation Area exceeds the 3 nautical mile, the offshore boundaries of the Nature Conservation Area;
  - corresponding inland areas to the designated Ramsar and/or EC Bird Directive areas being the adjacent inland marsh areas of the Danish Wadden Sea Region designated as international nature protection areas and the Bird Directive Areas of Schleswig-Holstein adjacent to the Nature Conservation Area;
  - the islands.

- The ‘Nature Conservation Area’:
  - In the Netherlands, the areas under the Key Planning Decision Wadden Sea;
  - In Germany, the Wadden Sea national parks and the protected areas under the Nature Conservation Acts seaward of the main dike and the brackish water limit;
  - In Denmark, the Wildlife and Nature Reserve Wadden Sea.

1.2 The current extent of the Wadden Sea Area and the Nature Conservation Area are shown in Annex 1 to this Declaration and this may be amended from time to time by the responsible authorities.
1.3 The protection and management of the Wadden Sea Area and the Nature Conservation Area require consideration of impacts which may arise outside these areas and these should be addressed as necessary.

1.4 For the specific purposes of cooperation on landscape and cultural heritage the Wadden Sea Area, and an area beyond, has been identified to include the main cultural entities and is shown in Annex 2 to this Declaration. 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.

2. Guiding Principle and Vision

2.1 The participating Governments reconfirm the guiding principle for the Nature Conservation Area:

To achieve, as far as possible, a natural and sustainable ecosystem in which natural processes proceed in an undisturbed way.

The principle aims at:

I. maintaining the water movements and the attendant geomorphological and pedological processes;
II. improving the quality of water, sediment and air;
III. safeguarding and optimizing the conditions for flora and fauna including:
   a) preservation of the Wadden Sea as a nursery area for North Sea fish;
   b) conservation of the feeding, breeding and roosting areas of birds, and the birth and resting areas of seals as well as the prevention of disturbances in those areas;
   c) conservation of salt marshes and dunes;
IV. maintaining the scenic qualities of the landscape, in particular the variety of landscape types and the specific features of the wide, open scenery including the perception of nature and landscape.

2.2 Recognising the fundamental nature of the guiding principle the participating Governments have developed a vision for the Wadden Sea:

The Wadden Sea is a unique, natural and dynamic ecosystem with characteristic biodiversity, vast open landscapes and rich cultural heritage, enjoyed by all, and delivering benefits in a sustainable way to present and future generations.

2.3 In the measures they take the participating Governments will allow themselves to be guided by the Precautionary Principle and Article 6 of the Habitats Directive.

3. Objectives for the Cooperation

3.1 The participating Governments aim to achieve:

a) A natural ecosystem, its functions and characteristic biodiversity.
b) Adaptability to climate change and other impacts.
c) Maintenance of the landscape and cultural heritage.
d) Sustainable use as defined by the Convention on Biological Diversity and as referred to in the Habitats Directive.
e) Public support for the protection of the Wadden Sea.
3.2 The participating Governments share the view that unreasonable impairment of the interests of the local population and its traditional uses in the Wadden Sea Area have to be avoided and that any user interests have to be weighed on a fair and equitable basis in the light of the purpose of protection in general, and the particular case concerned.

4. Areas of Cooperation

The participating Governments will pursue these objectives through:

a) The development and implementation of plans, policies and projects to maintain and enhance the natural values, landscape and cultural heritage of the Wadden Sea.

b) Coordinated and consistent management, including the production and implementation of a periodically updated Wadden Sea Plan as a joint management plan to address the requirements of EC Directives and other future needs.

c) Applying the concept of Integrated Coastal Zone Management.

d) Contributing to secure sustainable development possibilities for the Wadden Sea taking account of the natural and cultural values.

e) Coordinating and commissioning research and monitoring to improve understanding of the Wadden Sea ecosystem and changes to it.

f) Providing further opportunities for the public, with a specific focus on young people, to learn about, enjoy and experience the Wadden Sea, including the cross border context.

g) Involving all relevant stakeholders and considering their concerns in an adequate manner.

h) Intensifying international cooperation in relevant fields.

i) Raising the international profile of the Wadden Sea.

5. Institutional and Financial Arrangements

5.1 The participating Governments will, in order to modernize the organisational structure of the Cooperation, establish a Trilateral Wadden Sea Governmental Council, composed of the responsible ministers of the participating Governments to oversee the Cooperation, provide political leadership and strategic guidance.

5.2 They will also establish a Wadden Sea Board as the governing body of the Trilateral Wadden Sea Cooperation to be responsible for the implementation of the Joint Declaration and other Council decisions, preparation, adoption and implementation of the Strategy of the Cooperation, trilateral measures and activities, monitoring performance and accountability, and for ensuring strong relations with key stakeholders.

5.3 The Board will adopt rules of procedure and financial regulations for the organisation and management of its activities, and in particular:

a) Each of the participating national Governments will continue to fund one third of the costs of the Secretariat.

b) Projects may be funded on a unilateral, bilateral or trilateral basis.

c) Other sources of funding will be pursued as necessary and the appropriate arrangements established to manage such funds.
5.4 The Common Wadden Sea Secretariat (CWSS) will be supervised by the Board, and will support the Council and the Board and the implementation of the policies and projects agreed by them in accordance with the Administrative Agreement on a Common Secretariat for the Cooperation on the Protection of the Wadden Sea.

This Declaration supersedes the original ‘Joint Declaration on the Protection of the Wadden Sea’ signed in 1982.
Signed in English this 17 March 2010 in four original copies each being authentic, of which one is deposited at the Common Wadden Sea Secretariat.

For the Government of the Kingdom of Denmark

Karen Ellemann, Minister for the Environment

For the Government of the Federal Republic of Germany

Ursula Heinen-Esser, Parliamentary State Secretary

For the Government of the Kingdom of The Netherlands

Gerda Verburg, Minister of Agriculture, Nature and Food Quality
ANNEX 1

Wadden Sea Area and Nature Conservation Area
Note: Parts of the identified cultural entities are located outside of the Wadden Sea Cooperation Area as defined in 1.1. 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.
# List of Acronyms and Glossary

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AEWA</td>
<td>Agreement on the Conservation of African-Eurasian Waterbirds</td>
</tr>
<tr>
<td>BRISK</td>
<td>Sub-regional risk of spill of oil and hazardous substances in the Baltic Sea</td>
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<tr>
<td>BWM</td>
<td>Ballast Water Management</td>
</tr>
<tr>
<td>CBD</td>
<td>Convention on Biological Diversity</td>
</tr>
<tr>
<td>CPSL</td>
<td>Trilateral Working Group on Coastal Protection and Sea Level Rise</td>
</tr>
<tr>
<td>CWSS</td>
<td>Common Wadden Sea Secretariat</td>
</tr>
<tr>
<td>DenGerNeth</td>
<td>Joint maritime contingency plan to combat marine pollution by oil or other harmful substances in Denmark, Germany and the Netherlands.</td>
</tr>
<tr>
<td>EC</td>
<td>European Commission</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>HELCOM</td>
<td>Helsinki Commission</td>
</tr>
<tr>
<td>ICZM</td>
<td>Integrated Coastal Zone Management</td>
</tr>
<tr>
<td>IMO</td>
<td>International Maritime Organization</td>
</tr>
<tr>
<td>IWSS</td>
<td>International Wadden Sea School</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
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<tr>
<td>OSPAR</td>
<td>Oslo and Paris Convention</td>
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<tr>
<td>PSSA</td>
<td>Particularly Sensitive Sea Area</td>
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<tr>
<td>QSR</td>
<td>Quality Status Report</td>
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<tr>
<td>SafeSeaNet</td>
<td>European Platform for Maritime Data Exchange between Member States' maritime authorities</td>
</tr>
<tr>
<td>TMAP</td>
<td>Trilateral Monitoring and Assessment Program</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>WAMER</td>
<td>West African Marine Eco-Region</td>
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<tr>
<td>WSF</td>
<td>Wadden Sea Forum</td>
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<tr>
<td>WSP</td>
<td>Trilateral Wadden Sea Plan</td>
</tr>
<tr>
<td>WWF</td>
<td>World Wide Fund for Nature</td>
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</tbody>
</table>
Annex 7

Administrative Agreement 2010 on a Common Secretariat for the Cooperation on the Protection of the Wadden Sea.
Bekanntmachung
des deutsch-dänisch-niederländischen Verwaltungs-Übereinkommens
über ein Gemeinsames Sekretariat für die Zusammenarbeit
beim Schutz des Wattenmeers
sowie über das Außerkrafttreten
des früheren Verwaltungs-Übereinkommens von 1987

Vom 13. Juli 2010

Das vom Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit
der Bundesrepublik Deutschland in Westerland, Sylt, am 18. März 2010 unter-
zeichnene Verwaltungs-Übereinkommen von 2010 über ein Gemeinsames
Sekretariat für die Zusammenarbeit beim Schutz des Wattenmeers zwischen
dem Ministerium für Umwelt Dänemarks, dem Bundesministerium für Umwelt,
Naturschutz und Reaktorsicherheit der Bundesrepublik Deutschland und dem
Ministerium für Landwirtschaft, Natur und Lebensmittelqualität der Niederlande
ist nach seinem Artikel 10 für die Bundesrepublik Deutschland und für Dänemark
und die Niederlande

am 18. März 2010

in Kraft getreten. Das Übereinkommen wird nachstehend mit einer amtlichen
deutschen Übersetzung veröffentlicht.

Gleichzeitig wird bekannt gemacht, dass nach Artikel 9 dieses Überein-
kommens das Verwaltungs-Übereinkommen von 1987 über ein Gemeinsames
Sekretariat für die Zusammenarbeit beim Schutz des Wattenmeers zwischen
dem Ministerium für Umwelt Dänemarks, dem Bundesministerium für Um-
welt, Naturschutz und Reaktorsicherheit der Bundesrepublik Deutschland und
dem Ministerium für Landwirtschaft und Fischereiwesen der Niederlande
(BGBl. 1988 II S. 87, 88) für alle Vertragsparteien

mit Ablauf des 17. März 2010

außer Kraft getreten ist.

Bonn, den 13. Juli 2010

Bundesministerium
für Umwelt, Naturschutz und Reaktorsicherheit
Im Auftrag
Helmut Aida
Verwaltungs-Übereinkommen von 2010
über ein Gemeinsames Sekretariat
für die Zusammenarbeit
beim Schutz des Wattenmeers
zwischen dem Ministerium für Umwelt Dänemarks,
dem Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit
der Bundesrepublik Deutschland
und dem Ministerium für Landwirtschaft, Natur und Lebensmittelqualität
der Niederlande

Administrative Agreement 2010
on a Common Secretariat for the Cooperation
on the Protection of the Wadden Sea
between the Ministry of the Environment of Denmark,
the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
of the Federal Republic of Germany
and the Ministry of Agriculture, Nature and Food Quality of the Netherlands

The Ministry of the Environment of Denmark and the Federal
Ministry for the Environment, Nature Conservation and Nuclear Safety
of the Federal Republic of Germany and the Ministry of
Agriculture, Nature and Food Quality of the Netherlands, hereinafter referred to as the Parties,
mindful of the Joint Declaration dated 17 March 2010 of the
Federal Republic of Germany, the Kingdom of Denmark and the
Kingdom of the Netherlands on the Protection of the Wadden Sea and its implementation,
taking into account the conclusions arrived at in connection
with the trilateral governmental conferences on the protection of
the Wadden Sea,
recalling the Administrative Agreement on a Common Secretariat for the Cooperation on the Protection of the Wadden Sea,
dated 23 October 1987 as well as the revised governmental
mechanisms the cooperation agreed upon in the process of
evaluation and implementation in the period from 2007 until
2009, establishing a Triilateral Wadden Sea Governmental Council to provide political leadership as well as a Wadden Sea Board, consisting of senior administrative representatives of the
three Parties and headed by a Chair, to be the governing body of the Cooperation,
have agreed as follows:

Article 1
The Common Secretariat
for the Cooperation on the Protection of the Wadden Sea
(1) The Parties shall maintain the Common Secretariat for the
Cooperation on the Protection of the Wadden Sea as established
through the Administrative Agreement of 23 October 1987, hereinafter referred to as "the Common Secretariat".

(2) The duties of the Common Secretariat shall be carried out
by a Secretary who is provided with adequate support.

Das Ministerium für Umwelt Dänemarks, das Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit der Bundesrepublik Deutschland und das Ministerium für Landwirtschaft, Natur und Lebensmittelqualität der Niederlande, im Hinblick auf die Gemeinsame Erklärung der Bundesrepublik Deutschland, des Königreichs Dänemarks und des Königreichs der Niederlande vom 17. März 2010 über den Schutz des Wattenmeers und ihre Durchführung,
unter Berücksichtigung der Schlussfolgerungen, die im Zusammenhang mit den dreiseitigen Regierungskonferenzen über den Schutz des Wattenmeers erzielt wurden,
unter Bezugnahme auf das Verwaltungs-Übereinkommen vom
haben Folgendes vereinbart:

Artikel 1
Das Gemeinsame Sekretariat
für die Zusammenarbeit beim Schutz des Wattenmeers

(2) Die Aufgaben des Gemeinsamen Sekretariats werden von einem Sekretär wahrgenommen, der angemessene Unterstützung erhält.
Article 2

Functions of the Common Secretariat

(1) The Common Secretariat shall facilitate the implementation of the Joint Declaration of the Trilateral Wadden Sea Cooperation and shall provide a focal point for support and coordination of all trilateral activities.

(2.1) The functions of the Common Secretariat under the guidance of the Wadden Sea Board shall encompass:

- to provide high quality Secretariat services to the Wadden Sea Governmental Council and the Wadden Sea Board;
- communication of the work of the Cooperation;
- maintenance and the enhancement of relationships with international partners on behalf of the Wadden Sea Board;
- support of the implementation of the Strategy and the Wadden Sea Plan;
- preparation of plans and reports for consideration and approval by the Wadden Sea Board;
- to collect and disseminate information on conservation measures;
- to analyse legal instruments and/or other means in each country, in existence or needed, in order to fulfill the obligations resulting from the instruments mentioned in the Joint Declaration;
- to make suggestions for a coordinated approach by the Parties in international fora;
- to make an assessment of measures being taken or to be taken by other states adjacent to the North Sea and by the European Union;
- to provide assistance with regard to scientific symposia;
- management of the budget of the Cooperation.

(2.2) A more detailed description of the functions of the Common Secretariat is listed in the Rules of Procedure and Finance, which shall be adopted by the Wadden Sea Board.

(3) The Wadden Sea Board shall establish the annual Work Plans of the Common Secretariat.

Article 3

Appointment of the Secretary

(1) The Common Secretariat is headed by a Secretary who shall be appointed by the Wadden Sea Board. The Secretary shall be accountable to the Wadden Sea Board through the Chair of the Wadden Sea Board and shall report directly and regularly to the Chair. The Wadden Sea Board shall be responsible for reviewing the performance of the Secretary, annually.

(2) The Secretary shall be appointed for the period between two trilateral Governmental Conferences, which is normally 3 years. The tasks and duties of the Secretary are specified in the Rules of Procedure and Finance.

(3) Important decisions concerning the Secretary, including possible dismissal, shall be taken by the Wadden Sea Board according to the Rules of Procedure and Finance.

Article 4

Supervision of the Common Secretariat

The Wadden Sea Board shall supervise the performance of the duties of the Common Secretariat.

Das Bundesgesetzblatt im Internet: www.bundesgesetzblatt.de | Ein Service des Bundesanzeiger Verlag www.bundesanzeiger-verlag.de
Bundesgesetzblatt Jahrgang 2010 Teil II Nr. 26, ausgegeben zu Bonn am 1. Oktober 2010

Article 5

Budget of the Common Secretariat

(1) An indicative triennial budget for the Common Secretariat shall be prepared by the Secretary at the start of each triennium, marked by the triennial Governmental Conferences, and confirmed in annual budgets.

(2) Each of the Parties shall finance one third of the annual budget.

(3) The budget shares of the Parties shall be paid at the beginning of every budget year. The budget year of the Common Secretariat shall start on 1 January and end on 31 December of every calendar year. The accounts shall be closed at the end of the same year.

(4) The Wadden Sea Board shall adopt the triennial budget, the annual budgets, and the financial statements, including the salaries of the personnel of the Common Secretariat.

(5) Details are regulated in the Rules of Procedure and Finance.

Article 6

Working Language

The working language of the Common Secretariat is English.

Article 7

Legal Status and Domicile

(1) The Common Secretariat is located in the Federal Republic of Germany.

(2) The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety shall, without prejudice to the provisions of Article 3 (1) and Article 4, ensure the transition of the Common Secretariat to an existing or newly established organisational structure under German public law.

(3) The employees of the Common Secretariat shall be taken over with the same status as the current employment relationship. The new position should be in the same location or within the local area. Where the period of employment, service or probation governs the rights laid down in the Collective Agreement for the Public Service (TVöD) and in the collective agreements supplementing, amending or replacing the Agreement in the versions applicable for federal government employees, and in the Collective Agreement to Transfer Federal Employees to the Collective Agreement for the Public Service and to Regulate Transitional Law, periods of employment worked for the current employer shall be credited. Rights to non-cash benefits that were an integral part of the employment contract – where not covered by collective wage requirements and in due consideration of the principle of proportionality – shall be granted as special benefits outside of the collective wage framework as defined in the collective wage provisions.

Article 8

Amendments and Denunciation

(1) This Agreement can only be amended with the consent of the three Parties.

(2) Each Party may denounce this Agreement by written notification to the other Parties. The denunciation shall take effect 12 months after the last Party has received the notification, under no circumstances however prior to expiry of the period for which the secretary is appointed.

Article 9

Haushalt des Sekretariats

(1) Ein vorläufiger dreijährlicher Haushaltsplan wird vom Sekretär zu Beginn jedes Dreijahreszeitraums, der mit der alle drei Jahre stattfindenden Regierungs konferenz beginnt, für das Gemeinsame Sekretariat erstellt und in Jahreshaushalten bestätigt.

(2) Jede Vertragspartei finanziert ein Drittel des Jahreshaushalts.


(5) Einzelheiten sind in der Geschäfts- und Finanzordnung geregelt.

Article 6

Arbeitssprache

Arbeitssprache des Gemeinsamen Sekretariats ist Englisch.

Article 7

Rechtsstellung und Sitz

(1) Das Gemeinsame Sekretariat hat seinen Sitz in der Bundesrepublik Deutschland.

(2) Das Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit gewährleistet unbeschadet des Artikels 3 Absatz 1 und des Artikels 4, dass das Gemeinsame Sekretariat in eine bestehende oder in eine zu gründende öffentlich-rechtliche Organisationsstruktur der Bundesrepublik Deutschland überführt wird.


Article 8

Änderungen und Kündigung

(1) Dieses Übereinkommen kann nur mit Zustimmung der drei Vertragsparteien geändert werden.

(2) Jede Vertragspartei kann dieses Übereinkommen durch schriftliche Kündigung an die anderen Vertragsparteien kündigen. Die Kündigung tritt zwölf Monate nach dem Zeitpunkt in Kraft, zu dem die letzte Vertragspartei die Kündigung erhalten hat, auf keinen Fall jedoch vor Ablauf des Zeitraums, für den der Sekretär bestellt worden ist.
Article 9
Annulment of Former Agreement
The Danish-German-Dutch Administrative Agreement on a Common Secretariat for the Cooperation on the Protection of the Wadden Sea dated 23 October 1987 shall herewith be repealed on the date of entry into force of this Agreement.

Article 10
Entry into Force
This Agreement shall enter into force on the date of signature.

Done at Westerland, Sylt on 18 March 2010 in three copies in the English language.

Für das Ministerium für Umwelt Dänemarks
For the Ministry of the Environment of Denmark
Karen Ellemann

Für das Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit der Bundesrepublik Deutschland
For the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety of the Federal Republic of Germany
Ursula Heinen-Esser

Für das Ministerium für Landwirtschaft, Natur und Lebensmittelqualität der Niederlande
For the Ministry of Agriculture, Nature and Food Quality of the Netherlands
Gerda Verburg
Annex 8

Agreement on the Conservation of Seals in the Wadden Sea, 1990

The Parties,

RECOGNIZING that seals are an irreplaceable component of the Wadden Sea ecosystem and that they are of great importance as indicators of its condition;

AWARE that they constitute a separate population whose main range and the main migration routes are located in the Wadden Sea and which should, as a consequence, be managed as a single unit;

DEEPLY CONCERNED by the conservation status of that population, which as the result of mass deaths of seals has been reduced to the lowest level ever recorded;

WITH A VIEW to improving this conservation status through concerted action on the part of the States that exercise jurisdiction over the range of that population;

RECALLING the Convention on the Conservation of Migratory Species of Wild Animals signed at Bonn on 23 June 1979 and notably its Appendix II which was amended in 1985 to include the Wadden Sea population of the common or harbour seal;

RECALLING the Joint Declaration on the Protection of the Wadden Sea, adopted at the Third Governmental Meeting on the Protection of the Wadden Sea in Copenhagen on 9 December 1982;


RECALLING the trilateral Administrative Agreement on a Common Secretariat for the Cooperation on the Protection of the Wadden Sea of 23 October 1987;
Agreement on the Conservation of Seals

HAVE AGREED as follows:

I. Relationship with the Convention

This Agreement shall be deemed to be an agreement as defined in Article IV paragraph 4 of the Convention on the Conservation of Migratory Species of Wild Animals signed at Bonn on 23 June 1979.

II. Definitions

For the purpose of this Agreement:

a) "seal" means an animal of the species Phoca vitulina;

b) the "Agreement Area" means the area of water known as the Wadden Sea, including all sandbanks therein as well as all shore areas of the North Sea coasts of Denmark, the Federal Republic of Germany and the Netherlands between Blaavandshuk to the north and Den Helder to the west. The main ranges and the main migration routes are located in the Wadden Sea;

c) "seal population" means all seals which, at any time, are present in the Agreement Area;

d) "habitat" means any part of the Agreement Area which is essential to the maintenance of the vital biological functions of seals, including but not limited to breeding, whelping, nursing, feeding or resting;

e) "Convention" means the Convention on the Conservation of Migratory Species of Wild Animals signed at Bonn on 23 June 1979;

f) the terms defined in Article I, sub-paragraphs 1 (a) to (d) and 1 (l) of the Convention shall have the same meaning in this Agreement.

III. Purpose and Object

The Parties shall cooperate closely with a view to achieving and maintaining a favourable conservation status for the seal population.

IV. Conservation and Management Plan

The Parties shall develop on the basis of scientific knowledge a conservation and management plan for the seal population. This plan shall contain a comprehensive statement of actions which are or are to be undertaken by the Parties to achieve the goals of this Agreement. The Parties shall keep the plan under review and amend it, as may be required, taking into consideration, in particular, the results of scientific research.
V. Research and Monitoring

1. The Parties shall co-ordinate their research programmes and projects and their monitoring of the seal population to increase their knowledge of the biology and the habitats including harmful effects of human activities on the seal population to provide a basis for measures to improve its conservation status.

2. They shall, in particular, monitor and co-ordinate their research on,
   a) population trends e.g. through periodic aerial surveys and counts;
   b) seal migration;
   c) seal population parameters, e.g. diseases, survival, age structure, sex ratio.

VI. Taking

1. The Parties shall prohibit the taking of seals from the Wadden Sea.

2. The competent authorities may grant exemptions from the prohibition referred to in the first paragraph authorising persons to take seals:
   - for institutions to be designated performing scientific research into the conservation of the seal population in the Wadden Sea or the conservation of the Wadden Sea ecosystem, insofar as the information required for such research cannot be obtained in any other way; or
   - for institutions to be designated nursing seals in order to release them after recovery, insofar as these are diseased or weakened seals or evidently abandoned suckling seals.

Seals which are clearly suffering and cannot survive may be killed by the persons referred to in this paragraph.

3. Any Party having granted exemptions as mentioned above shall notify the other Parties as soon as possible and provide them with an opportunity for review and comment.

4. The Parties shall take appropriate action to suppress illegal hunting and taking of seals.

VII. Habitats

1. The Parties shall take appropriate measures for the protection of habitats. They shall pay due regard to the necessity of creating and maintaining a network of protected areas also in the migration areas of the seals in the Agreement Area and of ensuring the preservation of areas which are essential to the maintenance of the vital biological functions of seals.

2. The Parties shall preserve habitats and seals present from undue disturbances or changes resulting, directly or indirectly, from human activities.

3. The Parties shall have regard to the protection of habitats from adverse effects resulting from activities carried out outside the Agreement Area.

4. The Parties shall explore the possibility of restoring degraded habitats and of creating new ones.

VIII. Pollution

The Wadden Sea States are determined to do their utmost to further reduce pollution of the North Sea from whatever source with the aim of conserving and protecting the Agreement Area.

To this end they shall:
   a) endeavour to identify the sources of such pollution;
   b) co-ordinate their research projects regarding seal diseases and the effects on the seal population of
such substances, e.g. organochlorine compounds, heavy metals and oil, and agree on methods which permit a comparison of research results; c) monitor in the Agreement Area, in particular in seal tissues and in organisms which are preyed upon by seals, the levels of those substances which in the light of the results of research appear to play a major role in the conservation status of the seal population.

IX. Responsible Authorities

Each Party shall inform the other Parties of the authorities which shall be responsible for the implementation of this Agreement.

X. Public Awareness

The Parties shall take such measures as may be required to make the general public aware of the conservation status of the seal population, of the content and aims of this Agreement, and of the measures they have taken pursuant to this Agreement, including the Conservation and Management Plan, to improve this conservation status.

XI. Amendment of the Agreement

Any Party may propose amendments to this Agreement. Any such proposed amendment shall be submitted to the Depositary and communicated by it to all Parties, which shall inform the Depositary of their acceptance or rejection of the amendment as soon as possible after the receipt of the communication. The amendment shall enter into force ninety days after the Depositary has received notifications of acceptance of that amendment from all Parties.

XII. Effects on International Conventions and other Legislation

1. The provisions of this Agreement shall in no way affect the rights or obligations of any Party deriving from any existing bilateral or multilateral convention.
2. The provisions of this Agreement shall in no way affect the right of Parties to adopt stricter domestic measures concerning the conservation of seals.

XIII. Settlement of Disputes

1. Any dispute which may arise between the Parties with respect to the interpretation or application of the provisions of this Agreement shall be subject to negotiation between the Parties involved in the dispute.
2. If the dispute cannot be resolved in accordance with paragraph 1 of this Article within six months, the procedure provided for in the European Convention for the peaceful settlement of disputes of 29 April 1957 shall be followed.

XIV. Reservation

The provisions of this Agreement shall not be subject to reservations.

XV. Ratification, Acceptance, Approval

This Agreement shall be subject to ratification, acceptance or approval. Instruments of ratification, acceptance or approval shall be deposited with the Government of the Federal Republic of Germany,
which shall be the Depositary.

XVI. Entry into Force

This Agreement shall enter into force on the first day of the third month following the date of deposit of the third instrument of ratification, acceptance, approval or accession with the Depositary.

XVII. Denunciation

At any time, after the expiration of a period of five years from the date of entry into force of this Agreement, any Party may by written notice to the Depositary denounce this Agreement with effect from the end of a calendar year. This Agreement shall be terminated twelve months after the Depositary has received such notice.

XVIII. Depositary

1. The original of this Agreement, in the Danish, Dutch, English and German languages, each version being equally authentic, shall be deposited with the Depositary. The Depositary shall transmit certified copies of each of these versions to the States which have signed the Agreement and the Secretariat of the Convention.
2. The Depositary shall inform all signatory States and the Secretariat of the Convention of signatures, deposit of instruments of ratification, acceptance, approval or accession, entry into force of this Agreement, amendments thereto, and notices of denunciation.
3. As soon as this Agreement enters into force, a certified copy thereof shall be transmitted by the Depositary to the Secretariat of the United Nations for registration and publication in accordance with Article 102 of the Charter of the United Nations, and to the Secretariat of the Convention.

IN WITNESS WHEREOF the undersigned, being duly authorized to that effect, have signed this Agreement.

DONE at Bonn on 16 October 1990

For the Government of the Kingdom of Denmark

For the Government of the Federal Republic of Germany

For the Government of the Kingdom of the Netherlands
Annex 9

Trilateral Wadden Sea Plan 2010.
ELEVENTH TRILATERAL GOVERNMENTAL

CONFERENCE ON THE PROTECTION

OF THE WADDEN SEA

WESTERLAND/SYLT, 18 MARCH 2010
Publisher
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The 11th Trilateral Governmental Conference on the Protection of the Wadden was held on the German Wadden Sea island of Sylt on 17 – 18 March 2010 under the chairmanship of the German State Secretary Ursula Heinen-Esser. The Dutch and the Danish governments were represented by Minister Gerda Verburg and Minister Karen Ellemann.

The Ministerial Council adopted a revised Wadden Sea Plan. The 2010 Wadden Sea Plan updates the trilateral policies and management since the first Wadden Sea Plan was adopted at the 8th Conference in Stade in 1997. The Wadden Sea Plan constitutes the common framework for the protection and sustainable management of the Wadden Sea as an ecological entity.

Common Wadden Sea Secretariat
December 2010
INTRODUCTION

AIM AND BACKGROUND

The Wadden Sea, encompassing the coastal zone from Den Helder in The Netherlands to Blåvands Huk in Denmark, is an exceptional ecosystem of global importance, and together with its cultural landscapes is a shared responsibility of the three countries.

The vision of the Trilateral Wadden Sea Cooperation is a Wadden Sea which is a unique, natural and dynamic ecosystem with characteristic biodiversity, vast open landscapes and rich cultural heritage, enjoyed by all, and delivering benefits in a sustainable way to present and future generations.

1. The participating Governments have identified a Wadden Sea Cooperation Area and within this a Nature Conservation Area as the geographical basis of their Cooperation (see Map 1):

   The Wadden Sea Cooperation Area in short 'Wadden Sea Area':
   - the area seaward of the main dike, or where the main dike is absent, the spring-high-tide waterline, and in the rivers, the brackish water limit;
   - an offshore zone 3 nautical miles from the baseline as fixed nationally or where the Nature Conservation Area exceeds the 3 nautical mile the offshore boundaries of the Nature Conservation Area;
   - corresponding inland areas to the designated Ramsar and/or EC Bird Directive areas being the adjacent inland marsh areas of the Danish Wadden Sea Region designated as international nature protection areas and the Bird Directive Areas of Schleswig-Holstein adjacent to the Nature Conservation Area;
   - the islands.

   The 'Nature Conservation Area':
   - In The Netherlands, the areas under the Key Planning Decision Wadden Sea;
   - In Germany, the Wadden Sea national parks and the protected areas under the Nature Conservation Acts seaward of the main dike and the brackish water limit;
   - In Denmark, the Wildlife and Nature Reserve Wadden Sea.

The Cultural Entities

For the specific purposes of cooperation on landscape and cultural heritage the Wadden Sea Area, and an area beyond, has been identified to include the main cultural entities. 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.

2. The Wadden Sea Plan (WSP-2010) provides, in accordance with the Joint Declaration on the Protection of the Wadden Sea, a framework for the integrated management of the Wadden Sea Area as an ecological entity, as well as its landscape and cultural heritage, within the cultural entities. It sets out a series of Targets, as well as policies, measures, projects and actions to achieve these Targets, to be implemented by the Wadden Sea countries.

3. The Plan is a political agreement (meaning it is a legally non-binding document of common political interest) and will be implemented by the three countries in cooperation, and individually, by the competent authorities on the basis of existing legislation and through the participation of interest groups.
4. Through WSP-2010 the objectives of the Trilateral Cooperation, as contained in the Joint Declaration, will be implemented, i.e. achieving
   a. a natural ecosystem, its functions and characteristic biodiversity;
   b. resilience to climate change and other impacts;
   c. maintenance of the landscape and cultural heritage;
   d. sustainable use as defined by the Convention on Biological Diversity and the Habitats Directive;
   e. public support for the protection of the Wadden Sea.

5. In relation to the Wadden Sea World Heritage Property, the WSP-2010 also serves as the overall management plan to ensure the coordinated management of the Property.

6. WSP-2010 was developed with the participation of local and regional authorities and interest groups. It is a further development of WSP-1997, adopted at the 8th Trilateral Governmental Wadden Sea Conference (TGC-8; Stade 1997), following a decision by the TGC-6 (Esbjerg, 1991) to elaborate a management plan covering the Wadden Sea from Den Helder to Blåvands Huk in order to further substantiate the joint coherent protection. At the 1991 Esbjerg Conference and the subsequent TGC-7, (Leeuwarden, 1994), the cornerstones of the Wadden Sea Plan were adopted: the delimitation of the Trilateral Area of Cooperation and Conservation, the Guiding Principle, the Management Principles, and the Targets.

7. At TGC-10 (Schiermonnikoog, 2005) it was acknowledged that in order to continue and further intensify the cooperation for the protection of the Wadden Sea as an ecological entity, a coordinated and consistent implementation of the European legislation in a transparent way must be ensured. It was therefore agreed to further develop the WSP in accordance with the stipulations entailed in the Habitats, Birds and Water Framework Directives and other European Union directives and regulations, in particular Article 6 (1) of the Habitats Directive.

8. Therefore the WSP incorporates the relevant EU directives, especially the Birds and Habitats directives, into the management of the Wadden Sea Area.

9. The objectives of WSP-2010 will be achieved by applying inter alia the instrument of Integrated Coastal Zone Management and by harmonizing conservation objectives and good ecological status to the extent possible and at different levels of implementation, ranging from their definitions to harmonised methodologies for their assessment.

10. In compliance with national legal provisions, the focal point of trilateral nature conservation policy and management is directed towards achieving the Guiding Principle for “the Nature Conservation Area”, as laid down in the “Joint Declaration”, i.e. “to achieve as far as possible, a natural and sustainable ecosystem in which natural processes proceed in an undisturbed way”.

    Such an ecosystem contains the full range of natural and dynamic habitats (see Map 2), each of which needing a certain quality (natural dynamics, presence of typical species, absence of disturbance, absence of pollution), which can be reached by proper conservation and management. The quality of the habitats shall be maintained or improved by working towards achieving Targets which have been agreed upon for the tidal area, the offshore area, estuaries, salt marshes, beaches and dunes, the

INTEGRATED ECOSYSTEM MANAGEMENT
rural area, water and sediment quality, fish, birds and marine mammals, as well as landscape and cultural aspects.

In addition to the Guiding Principle, seven Management Principles have been adopted which are fundamental to decisions concerning protection and management within the Wadden Sea Area:

- the Principle of Careful Decision Making, *i.e.* to take decisions on the basis of the best available information;
- the Principle of Avoidance, *i.e.* activities which are potentially damaging to the Wadden Sea should be avoided;
- the Precautionary Principle, *i.e.* to take action to avoid activities which are assumed to have significant damaging impact on the environment, even where there is no sufficient scientific evidence to prove a causal link between activities and their impact;
- the Principle of Translocation, *i.e.* to translocate activities which are harmful to the Wadden Sea environment to areas where they will cause less environmental impact;
- the Principle of Compensation, *i.e.* that the harmful effect of activities which cannot be avoided, must be balanced by compensatory measures; in those parts of the Wadden Sea where the Principle has not yet been implemented, compensatory measures will be aimed for;
- the Principle of Restoration, *i.e.* that, where possible, parts of the Wadden Sea should be restored if it can be demonstrated by reference studies that the actual situation is not optimal, and that the original state is likely to be re-established;
- the Principles of Best Available Techniques and Best Environmental Practice, as defined by the Paris Commission.

11. The Targets of the Wadden Sea Plan are consistent with the national conservation objectives for habitat types and species in accordance with the EC Habitats and Bird Directives and national conservation laws, as well as water bodies and definitions of good chemical and ecological status in accordance with the EC Water Framework Directive. However, the three Wadden Sea states acknowledge some differences in their implementations of definitions of the Habitats Directive.

12. As stated in the Joint Declaration, the participating Governments will, in the measures they take, be guided by the Guiding Principle, the Precautionary Principle and Article 6 of the Habitats Directive.

13. The Targets are a specification of the UNESCO criteria which apply to the Wadden Sea World Heritage property in The Netherlands and in Germany and serve to implement these criteria.

14. The landscape and cultural heritage compliments the natural and environmental heritage. Despite local and regional diversity, the Wadden Sea has a common history in developing and shaping the landscape, in human survival adaptation strategies and techniques that have created a unique cultural heritage.

15. The Integrated Ecosystem Management approach is further specified in the Chapter "Integrated management". This chapter also addresses a number of issues, with an overarching character. It concerns climate change, alien species and shipping.

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**PRECONDITIONS**

16. The inhabitants of the coastal marshes and the islands in the larger Wadden Sea region depend upon an adequate coastal protection in a changing climate. The implementation of the Plan will not affect the priority of coastal flood defence and protection and the safety of the local inhabitants against the sea.
17. In accordance with the Joint Declaration, unreasonable impairment of the interests of the local population and its traditional uses in the Wadden Sea Area has to be avoided. Any user interests have to be weighed on a fair and equitable basis in the light of the purpose of protection in general, and the particular case concerned.

**ECONOMIC DEVELOPMENT AND POTENTIALS**

18. Within the constraints of suitable protection and natural development of the Wadden Sea, economic activities and development remain possible. Tourism and recreation, agriculture, industry, shipping, and fisheries have considerable economic significance for the Wadden Sea and sustainable human uses will continue. They must be continuously balanced in a harmonious relationship between the needs of society and ecological integrity. This will be done in cooperation with stakeholder fora and organizations, e.g. the Wadden Sea Forum.

19. Parts of the Wadden Sea Area of The Netherlands and Germany have been designated by the UNESCO as biosphere reserves participating in the worldwide network of the Man and Biosphere Program (MAB). MAB Reserves are protected areas of representative terrestrial and coastal environments, which have been internationally recognized under the United Nations Educational, Scientific and Cultural Organization (UNESCO) MAB Program for their value in conservation and in providing the scientific knowledge, skills and human values to support sustainable economical development. The WSP encompasses the management of the biosphere reserves.

20. After establishment of nearly the whole German Wadden Sea as National Parks in the years 1985, 1986 and 1990, Denmark has declared most of its Wadden Sea Area, including the islands and some embanked marshlands on the mainland, as National Park in 2010. The aim of the Danish National Park is to maintain a high nature protection level and to improve the culture and landscape aspects, in combination with improved economic sustainable development in order to contribute to a more viable region.

**COMMUNICATION, INFORMATION AND EDUCATION**

21. For the successful implementation of the Wadden Sea Plan and the long-term protection of the Wadden Sea as an entity, the awareness and support of the people living in this region is important. Communication, stakeholder involvement, information and education are a prerequisite for raising awareness and support. The trilateral approach to communication, information and education is specified in Chapter III.3.

**IMPLEMENTATION AND REVIEW**

22. Progress on implementing the trilateral policies and management in the Wadden Sea Plan will be evaluated every 6 years. As appropriate, the Plan will be amended on the basis of the conclusions and recommendations of the review process, which is specified in the Chapter III.2.

23. Projects and actions for implementing the trilateral policies are contained in a separate document to be developed and adopted by the Wadden Sea Board.
I. Integrated Ecosystem Management
1 The Ecosystem Approach as applied to the Wadden Sea

1.1 INTRODUCTION

The key message of the Joint Declaration (JD) is that Wadden Sea states will "... continue to manage the Wadden Sea as a single ecological entity for its natural, landscape and cultural heritage values, for the benefit of present and future generations."

The challenge of the Trilateral Wadden Sea Cooperation (TWSC) is to implement ecosystem management of the Wadden Sea Area by applying and integrating relevant EU Directives, as set out in §6 of the Schiermonnikoog Declaration (2005): "... a coordinated and consistent implementation of the European legislation [...] in particular Article 6 (1) of the Habitats Directive [...] and to develop common trilateral strategies for the future management of the landscape and cultural heritage."

The Objectives of the TWSC, as laid down in the JD and § 4 of the Introduction, are particularly relevant for an integrated ecosystem approach.

According to the Convention on Biodiversity (CBD), the ecosystem approach "is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention (conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources). It is based on the application of appropriate scientific methodologies focused on levels of biological organization which encompass the essential processes, functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of ecosystems." [CBD, 2000]

In the Preamble to the Habitats Directive it is stated "Whereas, the main aim of this Directive being to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements, this Directive makes a contribution to the general objective of sustainable development."

Three central elements in the above definitions are essential for integrated management of human activities:

1. The conservation and protection of ecosystem processes, functions, habitats and species and their interactions;
2. Sustainable human use;
3. Cultural diversity.

According to the first element, human activities in ecosystems must be managed for all aspects of the system, not only species or habitats but also processes and interactions.

The second element acknowledges that sustainable human use must be possible and integrated with ecosystem protection and that cultural diversity is part of an integrated approach.

The remainder of this Chapter addresses these elements in more detail:

Section 1.2 addresses the trilateral Targets and relevant EC Directives (Habitats and Birds, Water Framework, Marine Strategy Framework) from the perspective of an integrated ecosystem management approach.

Section 1.3 deals with Landscape and Culture.

Section 1.4 covers the World Heritage Property Wadden Sea.

Section 1.5 deals with sustainable use, in particular its management in and adjacent to the Wadden Sea Area.

In Section 1.6, the overall trilateral policy regarding integrated ecosystem management is formulated.
1.2 EC DIRECTIVES

The 1992 Habitats Directive (HD) deals with specific habitats and species which have their own defined characteristics and are clearly delimited in space. Together with the 1979 Birds Directive (BD), it provides the legal basis for establishing a Europe-wide network of representative protected areas (Natura 2000). The Habitats Directive requires member states to designate specific habitats and habitats for specific species as conservation areas and the adoption of conservation objectives for these habitats and species.

The aim is to achieve favourable conservation status for designated species and habitats. The conservation status of a habitat is favourable if: its natural range and area is stable or increasing; if the specific structure and functions necessary for its long-term maintenance exist and are likely to continue for the foreseeable future; and if the conservation status of its typical species is favourable. The latter is the case if the species concerned is a viable part of its natural habitats on a long-term basis, its natural range is not reduced in the foreseeable future and its habitats remain sufficiently large.

The Water Framework Directive (WFD, 2000) aims at improving the aquatic environment. It requires that Member States take a new, holistic approach to managing their waters. Member states are all required to implement the necessary measures in order to achieve "good status" by 2015 in all rivers, lakes, transitional waters, coastal waters and groundwater. "Good ecological status" for surface waters is defined through biological, hydromorphological, chemical and physico-chemical Quality Elements. The specific definition of the status of each quality element for each water category is provided in the Annexes to the Directive. Additionally, surface waters also have to have a good chemical status.

The implementation of the Directive and the setting and achievement of good status and other environmental objectives and targets are to be based on a river basin district structure. Management plans and programmes of measures must be developed for each river basin district.

There is a requirement within the Directive for the linkages between surface and groundwater and water quantity and water quality to be taken into account in meeting objectives. There is also a requirement for the integration of the management of water-dependent Natura 2000 sites and river basin plans, and moreover, consideration must be given to the water needs of wetlands.

The aim of the Marine Strategy Framework Directive (MSFD, 2008) is to achieve or maintain good environmental status in the marine environment by the year 2020 at the latest. It requires the development and implementation of strategies to (a) protect and preserve the marine environment, prevent its deterioration or, where practicable, restore marine ecosystems in areas where they have been adversely affected; and (b) prevent and reduce inputs in the marine environment, with a view to phasing out pollution, so as to ensure that there are no significant impacts on, or risks to, marine biodiversity, marine ecosystems, human health or legitimate uses of the sea. It requires the application of an ecosystem-based approach to the management of human activities and the integration of environmental concerns into the different policies, agreements and legislative measures which have an impact on the marine environment. Table 1 provides a brief comparison of the four Directives.

EC Directives and the ecosystem approach

The above Directives are the main legal instruments for implementing an ecosystem approach but are not ideal for this purpose. This is due to three main factors:

1. Structural differences between the three Directives;
2. Inherent deficiencies within each Directive;
3. Differences in national implementation.

The first factor is related to the broad time span over which the Directives have been developed. This has resulted in substantial differences in structures, making it difficult to integrate the three instruments at the administrative level.
Factor 2 relates to the development history of the three Directives. The differences in contents reflect important developments in nature and environment policies over almost three decades, starting with a sectoral approach (Birds Directive) and ending with a much more integrative approach (MSFD).

Table 1: Comparison of EC Habitats and Birds Directives (HD, BD), Water Framework Directive (WFD) and Marine Strategy Framework Directive (MSFD).

<table>
<thead>
<tr>
<th>BD + HD</th>
<th>WFD</th>
<th>MSFD</th>
</tr>
</thead>
<tbody>
<tr>
<td>General objective</td>
<td>Favourable conservation status</td>
<td>Good ecological status / potential &amp; good chemical status</td>
</tr>
<tr>
<td>Indicators</td>
<td>Habitat (range, structure and function, characteristic/typical species)</td>
<td>Biological (species composition and abundance) hydro-morphological, chemical and physico-chemical Quality Elements</td>
</tr>
<tr>
<td></td>
<td>Rare species (population, range, maintenance)</td>
<td></td>
</tr>
<tr>
<td>Reporting unit</td>
<td>Habitat type, species</td>
<td>Water body</td>
</tr>
<tr>
<td>Scale</td>
<td>Per country / bio-geographic area</td>
<td>River basin district</td>
</tr>
<tr>
<td>Management plan</td>
<td>N2000 management plan (Art. 6)</td>
<td>River basins management plan (Art 13, 11)</td>
</tr>
</tbody>
</table>

As a result, the Directives apply principally different concepts. The HD was the first of the integrative framework directives and focuses on the protection of individual habitats and not on ecosystems as a whole with their different interacting habitats and species. The WFD has a more integrative approach, but focuses mainly on the status of designated water bodies and not on key ecosystem processes. Biological quality elements are essential to define the status of surface water bodies according to the WFD, but only certain aquatic species are covered, e.g. not birds or mammals.

The MSFD is the “most integrated” Directive. Its relevance for an integrated ecosystem approach for the Wadden Sea ecosystem has not yet been analysed in detail.

Factor 3 is particularly relevant for the management of the Wadden Sea ecosystem, being a transboundary protected area. Because EU Member States implement framework directives at the national level (subsidiarity principle), differences may arise in the designation of areas covered by the directives, as well as conservation and protection aims.

For the Wadden Sea, the various national conservation objectives for habitats and species and the definition of good ecological status have proved to be highly comparable. Moreover, within the EU framework, work is ongoing to further harmonise and tune national implementation, as well as monitoring and assessment methodologies under the above mentioned Directives. This includes e.g. an intercalibration process under the WFD.

There are, however, also some important differences and inconsistencies (see list below).

Habitats and Birds Directives

a. Differences in the designation of Wadden Sea typical habitat and species types

- NL has designated the tidal and offshore area as types 1110 (sandbanks which are slightly covered by seawater all the time) and 1140 (mudflats and sandflats are not covered by seawater at low tide) only. Germany and Denmark have also designated types 1130 (estuaries), 1150 (coastal lagoons), 1160 (large shallow inlets and bays) and 1170 (reefs).*
  (*Following the recent clarification on the common definition of 1170 at EU level, the designation of eulitoral mussel banks as reefs in Germany will be revised at the next revision of the standard data forms.)
- There is much variation in the designation of bird species: only 25% of all relevant bird species is commonly designated.
• Variation in designation of fish species under the Habitats Directive.

b. Differences in the definition of habitat/species conservation objectives
• Quantified bird conservation objectives in NL and DK. Qualified objectives in D, mainly related to habitat quality.
• The marine mammal objectives formulated by The Netherlands partly comply with the relevant trilateral Target.

c. Differences in assessment of size and quality of various habitat types
• Habitat type 1170 (reefs)
• Habitat type 1110 (sandbanks which are slightly covered by seawater all the time)

d. Differences in management policy
• In NL and DK region-specific Natura 2000 management plans will be developed. In D, the WSP provides the management framework for the Wadden Sea national parks, supplemented by sectoral plans and specific Natura 2000 management plans for bordering sites inside the cooperation area.

Water Framework Directive

a. Differences in development of WFD reference conditions and classification tools.
• The development of tools, testing and adaptation of tools as well as fine-tuning is carried out with (partly) different approaches and time scales.

b. Differences in designation of water bodies
• Different types and numbers of water bodies (WB): In NL and DK, the Wadden Sea tidal area (intertidal and subtidal) is a single WB. In D, all four WB types have been assigned with a total number of 26 separate WBs (incl. Ems).
• NL has assigned a 1 sm strip along the Wadden Sea mainland coast as Heavily Modified Water Body (HMWB). In D, only transitional waters are HMWB.
• DK has no transitional water bodies within its sea territory and has not assigned HMWB in the Wadden Sea Area.

c. Development of management plans
• Tuning of WFD and HD not yet carried out (assessment criteria, conservation objectives).
• Regional differences (e.g. eutrophication) still exist.


a. Differences in application
• NL complies with the MSFD concerning the articles 2(1) and 3(1) sub a and b. NL will apply the MSFD to the part of the offshore area from the baseline to 3 nautical miles.
• D and DK will apply the MSFD to the whole Wadden Sea according to Art. 3 (1) of the directive.

The trilateral Target concept

The trilateral Target concept is principally an integrated ecosystem concept and therefore goes beyond the above EC directives. The Target concept fully covers and integrates the Habitats and Birds Directives, the Water Framework Directive and the World Heritage criteria (see Table 2).

The Targets are consistent with the Conservation Objectives and Good Ecological Status approach from the Directives and additionally serve the World Heritage criteria.

The Target concept is, furthermore, a trilateral concept relevant for the whole Wadden Sea Area. It is the common basis for the harmonisation of the different national approaches under the EC Directives.
Table 2: Thematic overlap of Wadden Sea Plan Targets with issues from the EC Directives and the World Heritage criteria

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>Wadden Sea Plan Targets</th>
<th>Habitats / Birds Directive</th>
<th>WFD</th>
<th>MSFD</th>
<th>World Heritage Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape + Culture</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>VIII, IX</td>
</tr>
<tr>
<td>Water and Sediment</td>
<td>+</td>
<td>+ (indirectly)</td>
<td>+</td>
<td>+</td>
<td>VIII, IX, X</td>
</tr>
<tr>
<td>Salt Marshes</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>VIII, IX, X</td>
</tr>
<tr>
<td>Tidal Area (eu- / sub-litoral)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>VIII, IX, X</td>
</tr>
<tr>
<td>Beaches and Dunes</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>VIII, IX, X</td>
</tr>
<tr>
<td>Estuaries</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>VIII, IX, X</td>
</tr>
<tr>
<td>Offshore Zone</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>VIII, IX, X</td>
</tr>
<tr>
<td>Rural Area</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Birds</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>X</td>
</tr>
<tr>
<td>Marine Mammals</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Fish</td>
<td>+</td>
<td>+ (transitional)</td>
<td>+</td>
<td>+</td>
<td>X</td>
</tr>
</tbody>
</table>

1.3 LANDSCAPE AND CULTURE

The cultural landscape heritage complements the natural and environmental assets in the Wadden Sea. Despite local and regional diversity, the Wadden Sea contains a common history in developing and shaping the landscape, in human survival adaptation strategies and techniques and a unique cultural heritage.

Based upon the WSP 1997, two projects regarding the maintenance and planning of the Wadden Sea landscape and cultural heritage have been carried out (Lancewad and LancewadPlan). These projects emphasized that the management of landscape and the cultural heritage is an issue of integrated spatial planning and the implementation of a trilateral strategy should be carried out by, or in close cooperation with, all administrative levels and with support of the people living and working in the region. The involvement of stakeholders is essential for the wise management of the heritage and, in particular, further integration of natural and landscape management should be an aim.

1.4 WORLD HERITAGE PROPERTY

In 2009 the nominated Wadden Sea of The Netherlands, Niedersachsen and Schleswig-Holstein was inscribed in the World Heritage list.

The inscription of the Wadden Sea as World Heritage Property is based upon the following criteria

- Criterion VIII: “outstanding examples representing major stages of Earth’s history, including the record of life, significant ongoing geological processes in the development of landforms, or significant geomorphic or physiographic features”
- Criterion IX: “outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals”
- Criterion X: “contain the most important and significant natural habitats for in situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation”

These criteria are fully covered by the trilateral Targets, as shown in Table 2.
1.5 SUSTAINABLE USE

The trilateral Wadden Sea Cooperation applies the concept of sustainable use as defined by the Convention on Biological Diversity in protecting and conserving the ecological integrity of the Wadden Sea ecosystem, thus supporting lasting economic prosperity and social well-being.

There are several approaches and instruments applied within the Wadden Sea Region through which sustainable use is developed and promoted. It concerns Integrated Coastal Zone Management (ICZM), zoning instruments, the Man and Biosphere (MAB) approach as well as many examples of interaction with stakeholders.

1.5.1 Integrated Coastal Zone Management

Integrated Coastal Zone Management (ICZM) is a concept for achieving sustainable use in the coastal area. In the recommendation of the EU Council and Parliament on ICZM (2002/413/), member states were asked to prepare national ICZM strategies based upon the following principles:

1. A holistic approach and strategic planning (land-sea approach);
2. A long-term perspective;
3. A long-term process;
4. Reflecting local/regional conditions;
5. Working with natural processes;
6. Participative planning;
7. Involvement of all layers of government;

Following the ICZM Recommendation, most EU Member States have prepared national strategies for ICZM. At the 10th Wadden Sea Conference, Wadden Sea states agreed to contribute to their national ICZM strategies in a trilaterally coordinated way, in consultation with the Wadden Sea Forum (Sch.D. §13).

In §4c of the Joint Declaration, ICZM is listed as one of the areas of cooperation of the TWSC.

1.5.2 Zoning

Zoning is a management instrument, partly implemented by law, to balance nature protection and human use of the Wadden Sea in space and time. Zoning covers regulations and measures related to specified geographical areas in the Wadden Sea Area to avoid and/or to alleviate conflicting interests in space and time within a protected area. This also includes temporal or permanent closure of areas.

In each country, zoning regulations for specific activities like agriculture, hunting, fisheries or tourism are implemented. Additional general zoning systems are in force in the three countries, regulating several human activities in the whole Wadden Sea Cooperation Area.

Comparing the different approaches to zoning, it appears that some similarities exist with regard to the zoning systems, although, in a formal sense, different protection regimes are implemented in The Netherlands, the three German Federal States and in Denmark.

1.5.3 Man and Biosphere

Biosphere Reserves are protected areas of representative terrestrial and coastal environments or a combination of both, which are designated according to international guidelines in the framework of the UNESCO “Man and Biosphere” (MaB) programme for the worldwide net of Biosphere Reserves (UNESCO 1996). Biosphere Reserves are model regions in which people's life and economic activity are in compliance with nature. The protection of nature is closely linked with sustainable use.

The Wadden Sea has been designated a Man and Biosphere (MAB) Reserve under the UNESCO Man and Biosphere Program by The Netherlands and the German states. Whereas the MAB-Reserve in the Dutch, Niedersachsen and Hamburg part is almost identical with...
the Conservation area, the MAB Reserve in Schleswig-Holstein also includes five Halligen islands as a development zone. In Niedersachsen, the uninhabited parts of the islands are included and the designation of a development zone landward of the dikes outside the National Park is in progress.

1.5.4 Danish National Park

The Danish Wadden Sea Area, including the islands and parts of the hinterland on the mainland, has been designated as National Park. Besides nature conservation and preservation of the cultural and landscape heritage, the aim is also to stimulate and promote commercial but sustainable activities like tourism and recreation. Moreover, it leaves space for the development of the more traditional industries (agriculture and fishery). It is intended that the “National Park Wadden Sea” will be a valuable contribution to regional development in the Danish Wadden Sea and serve as an example of ICZM.

1.5.5 Wadden Sea Forum

The Wadden Sea Forum (WSF) was established in 2002, following a decision at the 9th Trilateral Governmental Conference 2001 in Esbjerg. The WSF acts as a cross-border stakeholder forum and an independent body consisting of representatives of Agriculture, Energy, Fisheries, Industry and Harbour, Nature Protection and Tourism, as well as local and regional authorities from The Netherlands, Germany (Niedersachsen and Schleswig-Holstein) and Denmark.

The Ministerial Declaration of the 10th Trilateral Governmental Conference 2005 in Schiermonnikoog reinforces the importance of stakeholder participation and recognizes that the achievement of the Guiding Principle of the Cooperation “can only be obtained in cooperation with those who live, work and recreate in the area and are willing to endow its protection”. Geographically, the WSF deals not only with the Wadden Sea Area but with the wider Wadden Sea Region.

In its report “Breaking the Ice” (2005), the WSF developed a vision, agreed upon by all its members, that supports the protection of the Wadden Sea Area and emphasizes:

“The Wadden Sea Region has a strong identity, which is rooted in the cultural heritage, the typical Wadden Sea landscape features and the unique, from a world wide perspective, Wadden Sea nature area. The Region has a natural biodiversity and decreasing concentrations of polluting substances.

The Region is characterized by dynamic urban centres and a vital rural community with a balanced population structure and good public facilities. The Wadden Sea Region offers room for entrepreneurship and economic activities make optimal (i.e. sustainable) use of the specific advantages of the Region, in particular the location by the sea, the nature potentials and the positive population development.

In general people like to live in the Wadden Sea Region. For the Wadden Sea Area, which is the area covered by the Trilateral Cooperation on the Protection of the Wadden Sea, the trilateral Targets represent the ecological objectives. The Area has an unspoilt beauty, is understood as a joint heritage of the entire Region and the ecological Targets are respected by all sectors.”

From 2006 the WSF defined the following goals:

• to oversee, stimulate, support, facilitate and evaluate the implementation of the WSF strategies and action plan for sustainable development
• to exchange information on experiences and best practice with regard to the Wadden Sea Region and foster sustainable development within it;
• to bring together the sectoral interests of its members;
• to exchange views on general themes and topical issues;
• to prepare advice on issues related to sustainable development and integrated coastal zone management;
• to initiate and implement projects and actions on topical issues;
• to serve as a consultation body for governments.
In 2008 a Memorandum of Understanding (MoU) was concluded between the WSF and the Trilateral Wadden Sea Cooperation (TWSC) recognizing the importance of a close cooperation. The MoU is based on the mutual acknowledgement by the WSF and the TWSC of the Shared Principles including the Guiding Principle, the Shared Vision and the Targets as laid down in the Wadden Sea Plan, respecting the existing protection levels and ensuring sustainable economic development and quality of life. According to the MoU, WSF serves as an independent trilateral advisory and consultation body to the TWSC and prepares relevant statements and background information. It will be consulted and prepare advice on matters regarding sustainable development of the Wadden Sea Region and will be consulted in the framework of the development of the Wadden Sea Plan, the draft Declaration of the 2010 Wadden Sea Conference, national ICZM strategies and other issues of relevance for the Wadden Sea Region in as far as this is within the mandate of the TWSC. Several joint projects have been agreed upon. Among them are the further development of ICZM and sustainability indicators, the elaboration of a guidance document for a trilateral Goose Management Plan, cooperation on shipping safety issues, including container shipping, and support for and promotion of the Wadden Sea World Heritage Property among the sectors and stakeholders. Finally, the WSF will stimulate and support the cross-border and cross-sector dialogues and will discuss and integrate, to the extent possible, relevant input to the regional Wadden Sea advisory bodies and submit the results to the TWSC on a regular basis.

1.6 TRILATERAL POLICIES

1.6.1 The overall policy objective is to further develop a consistent integrated trilateral management approach to the Wadden Sea ecosystem, based on the status of protected areas there and including sustainability of uses, aspects of the landscape and cultural heritage and the integrity of the World Natural Heritage Property. To this end the implementation of relevant EC Directives will be harmonised as far as possible, in particular with regard to differences in national conservation objectives that may, in the medium or long term, aggravate differences in protection level and/or conditions for sustainable use. More specific policies, relevant to harmonisation, are in the Target chapters.

1.6.2 In line with the existing protection regimes, sustainable use will be further improved by stimulating relevant initiatives and projects, including the further development and improvement of ICZM and sustainability indicators, in close cooperation with the Wadden Sea Forum and other relevant stakeholder organisations.

1.6.3 An overall Sustainable Tourism Development Strategy for the Wadden Sea World Heritage Site will be developed, in order to meet the request of the World Heritage Committee, the Hamburg Wadden Sea National Park, and the Danish National Park, pending formal approval by its forthcoming board. As a first step, a Wadden Sea Communication and Marketing Programme 2010-13 will be adopted.
2 Overarching themes

This chapter concerns climate change, alien species and shipping safety – three themes relevant to all Wadden Sea habitats and for which it is essential to apply an integrated ecosystem approach.

A number of activities, the most prominent ones taking place outside the Wadden Sea Conservation Area, potentially affect the Wadden Sea ecosystem, but are essential for the regional economy and conditions for people living in the area or visiting as tourists. These activities are coastal flood defence and protection, energy generation, shipping and the related (maintenance) dredging of the shipping routes and harbour developments.

For example, the increasing energy production in the Wadden Sea Region, both onshore and offshore, will have several side-effects, such as increasing ship traffic in the coastal sea and cable crossing through the conservation area. Air pollution may increase as well as interference with bird flyways. The increasing ship traffic in general results in increased dredging and harbour extension.

As far as relevant these activities are covered in the respective Target chapters. All activities likely to have a significant effect on the Wadden Sea ecosystem, either individually or in combination with other plans or projects, are subject to licensing following an impact assessment in accordance with the stipulations of the Habitats Directive.

Also, coastal defense may be regarded as an overarching theme which is essential for the safety of the inhabitants while also having impacts on the Wadden Sea ecosystem. Aspects of coastal flood defense and protection are included in the section on Climate change.

2.1 CLIMATE CHANGE

2.1.1 Status and assessment

Climate change will have an impact on Wadden Sea habitats and species, the safety of its people and on cultural heritage and sustainable use. The impacts may become manifest in two ways: first through changes in physical, chemical and biological parameters such as sea level rise, erosion or sedimentation, water temperature, acidity and species composition, *i.e.* fish; and second, through human responses such as coastal flood defence and protection measures.

Changes will affect valuable natural and cultural heritage assets throughout the Wadden Sea. The combined impacts of these changes on the ecosystem are so diverse and numerous that predictions of the expected direction of change are very difficult and in some cases impossible to foresee. Major concerns exist with respect to latest projections on sea level rise that range between 0.5 and 1.3 m for this century. Thus is should be anticipated that, in the long term, not enough sediment will be imported and redistributed by natural processes to maintain present ecological functions. Nature protection, coastal flood defence and protection, cultural heritage and conservation policies and management must therefore become more flexible, so that adaptation to change is possible. This is particularly relevant in the implementation of conservation objectives under the Habitats and Birds Directives and the ecological quality requirements of the Water Framework Directive.

2.1.2 Trilateral Policies

An integrated approach is required. As a first step, a Trilateral working group on Coastal Protection and Sea level Rise (CPSL) was established in 1998, in which experts from coastal and nature protection, and since 2005 spatial planning, have worked together.

A long-term trilateral strategy on increasing adaptability to the effects of climate change will be developed, with a view to protecting the people living in the region and conserving the natural, landscape and cultural heritage qualities of the Wadden Sea.
Such a strategy
- includes guidance on which policy steps to take for different climate impact scenarios;
- aims to make conservation management more flexible by intensifying contacts with relevant scientists so that the latest research and advice is used to adapt monitoring and management programmes;
- indicates concrete steps towards increasing the adaptability of the ecosystem i.e. its ability to cope with changes, the natural diversity, especially along the mainland coast. This will be done in close cooperation with responsible coastal flood defence and protection authorities and in close consultation with all stakeholders, taking into account landscape and cultural heritage features;
- contains pilot projects and research programmes on climate change adaptation of the Wadden Sea, the resilience of the ecosystem and on coastal flood defence and protection, and contains initiatives to share best practice and lessons learnt throughout the Wadden Sea. The focus will be on projects combining coastal and nature protection;
- includes concrete steps towards developing and implementing instruments for flexible spatial planning, integrating the living situation and safety of people, as well as the resilience of the ecosystem, and including landscape and cultural heritage features. These instruments will involve all relevant stakeholders and broad communication of the results in the planning process.

2.2 ALIEN SPECIES

2.2.1 Status and Assessment

The dispersal of organisms is a natural process limited by multiple barriers, among which geographical barriers are the most evident. However, for centuries humans have introduced alien species to new areas where they were previously absent. They might survive and subsequently reproduce in a newly occupied habitat. If they are invasive, they are known or expected to have negative effects on native populations and species, natural habitats and ecosystems.

With increasing global trade, the introduction of alien species, both intentional and unintentional, has increased concomitantly and has increased in complexity. Next to global habitat loss and climate change, this biological globalization has become a key process in altering the biosphere.

At the North Sea coast, many of the introduced species, mainly algae and invertebrates, arrived via international ship traffic, especially in ballast waters, but also in aquaculture. They most often became established within estuaries and on hard substrates, with more than 80 known species. About 52 of them occur within the Wadden Sea and a preliminary assessment of the aliens’ impact on the natural biodiversity of the Wadden Sea shows that presently most cause no or only minor impacts.

Of the 52, six have already had or are about to have effects on the composition of the existing biota in the Wadden Sea: cord-grass, Japanese seaweed, bristle worm, American razor clam, American slipper limpet and Pacific oyster.

Terrestrial alien plant and animal species have also found – and will find – their way into the Wadden Sea ecosystem. A well-known example is the (former) introduction of the rugose rose, which has in several places outflanked the native species and vegetation types, and reduced the typical dynamics of some dune habitat types. Of the mammalian aliens, the North American mink, ferret and muskrat have caused changes, e.g. in the predation pressure on breeding birds and the safety of sea dikes in some places.

2.2.2 Trilateral Policies

The Trilateral Cooperation will support and intensify efforts to harmonise approaches to the prevention, management and monitoring of aquatic and terrestrial alien species.
introductions and will develop a common strategy for dealing with invasive alien species associated with ballast waters and aquaculture. This is also in line with a request from the UNESCO World Heritage Committee.

2.3 SHIPPING SAFETY

2.3.1 Status and Assessment

The consequences of shipping accidents for the Wadden Sea can be immense. In order to raise awareness regarding the vulnerability of the Wadden Sea, the area has been designated as a Particularly Sensitive Sea Area (PSSA) by the IMO in 2002. Its effectiveness has been reviewed in 2010, leading to several recommendations.

The general risk and potential consequences of accidents and the PSSA designation lead to the obligation to maintain and where necessary enhance shipping safety and reduce impacts from shipping on the Wadden Sea. Also further implementation of policies and actions to prevent oil pollution from shipping - both from illegal discharges and from accidents - as well as control and enforcement measures needs to be continued. This is also valid for reducing the exhaust emissions from ships.

2.3.2 Trilateral Policies

Shipping and shipping safety is considered as one of the priority issues for the Wadden Sea Region. This concern has also been raised in the Wadden Sea Forum, leading to 35 recommendations concerning policy and management necessities. These recommendations were reviewed in conjunction with the agreements taken at the Esbjerg Conference. Where not already taken, action is needed at both the trilateral and international level. Specific actions should be focused on:

- spatial planning and shipping safety in the EEZ;
- day-to-day joint cooperation in the framework of the DenGerNeth plan;
- appropriate towing and pollution response capacity;
- the practical implementation of Places of Refuge;
- harmonization of the no-special-fees system;
- aerial surveillance in the relevant coastal areas and the EEZ;
- container shipping and loss of containers.

As an important standard, the safety of shipping in the North Sea Area should be kept at least at the present level, irrespective of which kind of offshore development might occur, and where feasible be enhanced.
II. The Targets
1 Landscape and Culture

For the specific purposes of cooperation on landscape and cultural heritage, the Wadden Sea Area and an area beyond has been identified for inclusion of the main cultural entities. As shown in Map 3, parts of the identified cultural entities are located outside the Wadden Sea Cooperation Area. 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.

In Germany such a cooperation would fall mainly under the responsibility of the Counties (Landkreise). Although the importance of preserving the cultural heritage of the Wadden Sea is acknowledged, the development of human use in a sustainable way remains further possible, because this is the basis of life of many people on the islands and in the coastal area.

The landscape of the Wadden Sea Coast, with some 22,000 km² the world’s largest transgressional coastal wetland site, consists of three parts. The Wadden Sea proper basically comprises the Wadden Sea Conservation Area (ca. 11,000 km²), consisting of water, tidal flats, salt marshes and dunes, as in Niedersachsen, where most of the islands are included in the Nature Conservation Area. Although the Wadden Sea is a natural area, it contains some very important cultural heritage features, past and present. Examples include the landscape of islands, Halligen and marsh areas, the Friesian language and regional traditions. Then there are the scores of ship-wrecks dating from Mediaeval and Early Modern Times in the western Wadden Sea and in the northern Wadden Sea there are many inundated archaeological traces of agriculture and salt mining.

The further parts are the islands which belong to the Cooperation Area and, mostly outside of the Cooperation Area, endiked former salt-marshes or polders which are landwards of the sea dikes. The endiked area forms a cultural landscape created at the interface of land and sea. Being an amphibious landscape, it constitutes a unique example of a transgressive coastal region with an occupational history of nearly three millennia. As such it is the result of the interaction of physical developments (a Holocene landscape under a relatively strong sea level rise) and intentional as well as unintentional human actions.

The 50 or so (Friesian) islands together can be roughly divided into two categories. The larger category is formed by the generally sandy islands or islands with cores formed by glacial moraines. These make up a chain of barrier islands from Den Helder at the south-western end of the Wadden Sea region up to Esbjerg at its north-eastern end. The smaller category of islands, lying inside the barrier islands and off the North Friesian coast, are the so-called Halligen marsh islands that are partial remnants of a former salt-marsh destroyed by the sea. Apart from separating the Wadden Sea from the North Sea, the islands with their age-old agrarian-maritime societies form the most dynamic eco-cultural frontier zone of the Wadden Sea.

The marshes have been settled uninterruptedly since 600 BC. Thousands of dwelling mounds, and miles of ditches (partly of a natural, partly of an artificial origin) give archaeological and visual evidence of an occupational history reaching back nearly 3000 years from today. Since about 1000 AD, intentional water and landscape management by means of dike systems has resulted in the embankment of large salt marsh areas. Dike and water management under transgressive maritime conditions originated here, in an area characterized by sluggish natural drainage. The techniques were subsequently exported to western central parts of Holland, and from there to the Elbe- and Wesermarshes, to Poland, Russia, France and England.

Sea level rise, together with the subsidence of the inland moorlands as a result of their cultivation from Carolingian times, put the inhabitants in constant jeopardy. Apart from the danger of floods, they had to adapt to an increased inflow of fresh water to the marshes by
using drainage, which as a consequence caused the subsidence of inland bogs. Moreover, they faced a constant threat of diseases (endemic malaria etc.) because of the increasing volumes of fresh water. The insular character of the region (it was relatively isolated from the hinterland) combined with the commercial success of farming in a fertile but hazardous environment to create a tradition of independence and self-sufficiency. During the Middle Ages, this coastal society found its political and social expression in the so-called Friesian freedom, evolving already in pre-modern times into a rather autonomous and individualistic society. One of the direct consequences was the high density of villages (parishes) with their still existing medieval churches as well as noble houses (*stijnen, states, borgen*), most of which have since been demolished.

**THE TARGETS**

- Identity - to preserve, restore and develop the elements that contribute to the character, or identity, of the landscape, which forms the basis for life of the people living in the region
- Variety - to maintain the full variety of cultural landscapes, typical for the Wadden Sea landscape
- History - to conserve the cultural-historic heritage
- Scenery - to pay special attention to the environmental perception of the landscape and the cultural-historic contributions in the context of management and planning

**STATUS AND ASSESSMENT**

The cultural landscape of the Wadden Sea is a rich, complex and irreplaceable resource. It has great potential both with regard to its intrinsic value and its role in economic development. From an economic perspective, the landscape of the Wadden Sea is gradually changing from a production area into a consumption area, as are many other cultural landscapes today. There is a growing need for distinctive and unique landscapes, for places with stories and histories that offer visitors new perceptions and experiences and that offer local inhabitants and entrepreneurs new opportunities to generate income.

Not only is the economic landscape changing; the social situation of its inhabitants has changed significantly in the last few decades. This is reflected in the way people now look at their surroundings and the issues they raise concerning the environment they want to live and stay in. An environment which local people can identify with becomes increasingly important, especially in regions with a decreasing population – such as this area.

The challenge is to safeguard cultural and landscape assets and use those strengths regionally, because only a living landscape will create living communities and vice versa. The heritage is however vulnerable to change resulting from agricultural policies, urban development, use of the landscape for energy infrastructure and change in demography.

Enlargement of land parcels, urbanization and industrialization, e.g. harbour development and construction of power plants and the associated construction of infra-structural installations, enhance this transformation. This development interferes with characteristic elements such as the openness, serenity and identity of the landscape, the topography of the landscape, the biodiversity and the cultural-historic remnants. The construction of wind turbines has increased significantly during recent years because the production of electricity from wind energy is particularly productive in the area. However, wind turbine installations also impinge upon the landscape values.

**HOW TO PROCEED**

The Lancewad Plan project was carried out during the period 2004-2007. It was based upon the extensive inventory of the landscape and cultural heritage in the wider Wadden Sea from the Lancewad project (1999-2001), launched on the basis of the Wadden Sea Plan 2010.
Plan. The Lanczerrad Plan project has resulted in a draft Integrated Landscape and Cultural Heritage Management and Development Plan for the Wadden Sea Region “A Living Historic Landscape” for consideration by the Parties.

The proposed strategy “A Living Historic Landscape” is a long term vision of how this heritage will be maintained as a shared heritage. The stakeholders, both governmental and non-governmental, have an essential role and function to fulfil in conserving this heritage. It is intended to help create and extend new opportunities to stimulate local ownership and local responsibility for the maintenance and sustainable use of the cultural landscape. It is an integrated strategy which takes as its starting point the fact that the unique landscape and cultural heritage are combined and multifaceted. This strength and potential must be safeguarded and further developed through an integrated approach.

The aims of “The Wadden Sea Region: A Living Historic Landscape” are primarily

- To establish an overall framework for the management and sustainable development of the cultural landscapes and heritage in order to give the heritage a role in coastal development
- To establish and further extend a network within which the competent stakeholders act and co-operate in a trans-boundary context
- To implement sector strategies to support the opportunities that heritage presents for regional development
- To further raise awareness of the unique landscape and cultural heritage.

It is recommended to identify and evaluate the landscape and cultural heritage in an international context and on the basis hereof determine the specific features around which a cooperation should be further developed.

The development of this approach is at different stages in the three countries. Policies on landscape and culture have already been agreed upon in The Netherlands and Denmark, whereas in Germany the discussion is just beginning.

TRILATERAL POLICY AND MANAGEMENT

1.1 Set up a working group of the three Wadden Sea countries including the responsible authorities and stakeholders with the aim of

- Enhancing the involvement and responsibility of relevant authorities and stakeholders for the management of the landscape and cultural heritage by, or in close cooperation with all relevant administrative levels and with support of the people living and working in the region.
- Intensifying the integration and collaboration between the natural environment and landscape management.
- Promoting the further development of appropriate planning instruments.

The group will take into account the results of the Lanczerrad Plan project as a starting point.
2 Water and Sediment

The Wadden Sea is an open system. With the rising tide, marine water and sediment from the North Sea enter the Wadden Sea. Fresh water and sediments are discharged by a number of large rivers. The quality of water and sediment in the Wadden Sea is mainly determined by the external sources through which polluting substances enter the Wadden Sea. Atmospheric deposition is an additional source of pollution.

Pollutants are generally divided into three types, namely 'natural micro-pollutants', 'man-made micro-pollutants' and 'macro-pollutants'. The first class contains substances like heavy metals, which are not only produced by humans, but which also occur naturally in the environment, be it in low concentrations.

The second class, the man-made substances, also called xenobiotics, contains PCBs, pesticides and endocrine substances.

The third class, macro-pollutants, contains substances which are of natural origin and can be found in relatively high concentrations in the (marine) environment. The most important ones are nutrients, in particular phosphorus and nitrogen compounds.

Micropollutants can have toxic effects on biota, for example, through interference with the reproductive system or the immune system. These effects can be aggravated through bio-accumulation and synergism. Nutrients in excess concentrations and quantities may lead to increased primary production which, in turn, can cause negative effects like oxygen depletion as a result of decaying algal material, shifts in species composition, increased blooms of toxic algae and remobilization of micro-pollutants.

A strategy for dealing with pollution of water from chemicals is set out in Article 16 of the Water Framework Directive 2000/60/EC (WFD). As a first step of this strategy, a list of priority substances was adopted, identifying 33 substances of priority concern at Community level. The Directive 2008/105/EC of the European Parliament and of the Council on environmental quality standards in water policy (developed under Article 16 of and amending Directive 2000/60/EC) has the objective to ensure a high level of protection against risks to or via the aquatic environment arising from these 33 priority substances by setting European environmental quality standards. In addition, the WFD requires Member States to identify specific pollutants in the river basins and to include them in the monitoring programmes (both of priority substances and other pollutants for the purpose of determining the chemical and ecological status according to Article 8 and Annex V of the WFD).

THE TARGETS

- Background concentrations of natural micropollutants.
- Concentration of man-made substance as resulting from zero-discharges.
- A Wadden Sea ecosystem which can be regarded as eutrophication non-problem area.
- Improvement of habitat quality for conservation of species.

The Targets are valid for the tidal area, the offshore area and the estuaries, and are consistent with the definitions of "good chemical status" according to the WFD. Under the WFD, Environmental Quality Standards (EQS) have been developed for priority substances in water (Directive 2008/105/EC). Comparable standards for sediment and biota will not be available at the Community level but must be developed by the member states.

The Targets also support the World Nature Heritage criteria VIII–X.

In the assessment of the Wadden Sea Targets, the OSPAR Background Assessment Criteria (BAC) and the OSPAR Ecological Quality Objectives (EcoQOs) are applied.
STATUS AND ASSESSMENT

The pollution of the Wadden Sea originates mainly from external sources. It concerns

• The rivers. The major rivers Elbe, Weser, Ems and the IJssel, a branch of the Rhine. In addition, a substantial part of the Rhine water enters the Wadden Sea via the North Sea through a coastal flow along the Dutch coast. Rivers are by far the largest carrier of polluting substances from the land to the Wadden Sea.

• The North Sea. Due to the net North Sea current, a substantial part of North Sea water and suspended particles – and consequently polluting substances – enter the Wadden Sea.

• The atmosphere. The Wadden Sea lies at the rim of northwestern Europe. A significant part of its pollution is caused by atmospheric deposition which originates from the highly industrialized northwestern and central European countries and exhaust emissions from ships.

Below is an assessment of the pollution status of the Wadden Sea.

Eutrophication

Though input of nutrients, especially of phosphate, has decreased, the entire Wadden Sea still has to be considered a eutrophication problem area, meaning that the target of a Wadden Sea which can be regarded as "eutrophication non-problem area" has not yet been met. Regional differences observed indicate a more intense eutrophication in the southern as compared to the northern Wadden Sea.

Hazardous substances

The riverine input of metals (Cd, Cu, Hg, Pb, Zn) in the period 1996 – 2007 remained at the same level as in 1995, or continued to decrease at a moderate rate. For some metals, the Target of background concentrations in sediment and biota (blue mussels and bird eggs) has not yet been reached in all sub-areas. For a number of xenobiotic compounds discharges to and concentrations in the Wadden Sea have decreased; however, the target has not yet been reached. Some of these substances still pose a risk to the ecosystem. Many newly developed xenobiotics, including hormone disruptors, occur widely in the Wadden Sea ecosystem and may have deleterious effects on the ecosystem.

Oil and seabirds

The major sources of oil pollution at sea in the Wadden Sea region are illegal discharges of oil residues, which are a constant threat to sea- and water-birds. Although the oil rates among beached birds have decreased since the 1980s they are still high. The oil rate of the guillemot is still about three times higher than the OSPAR-EcoQO of 10% set for this species. The Wadden Sea coast is hit repeatedly by oil spills. In the period since the last QSR was published, one oil spill from a cargo ship polluted the coast of Niedersachsen and two oil spills from unknown sources polluted the Schleswig-Holstein west coast.

Marine litter

Litter in the marine environment is a constant threat to wildlife, a hindrance to human activities, incurs high economic costs, is unsightly and reduces the recreational value of our coasts. It is a worldwide problem that doesn’t stop on the borders of the Wadden Sea. Information on the levels and trends in litter pollution for the Wadden Sea region from OSPAR–Beach Litter Monitoring and other studies that have been carried out in the Wadden Sea and adjacent waters show that plastic items make up the major part of litter polluting the marine environment. Thousands of litter items per kilometre are recorded regularly during the OSPAR beach surveys. Up to 40% of the litter recorded on beaches in the region comprises various forms of packaging. Lost or discarded nets from the fisheries industry make up 28% of the litter. The results of the OSPAR beach surveys indicate that litter pollution is presently on the increase in the southern North Sea area and a recent analysis of beached birds data indicates that entanglements with litter are also on the increase.
HOW TO PROCEED

The trilateral policy and management on pollution issues is closely related to developments within the Oslo and Paris Convention (OSPAR), the International Maritime Organization (IMO) and the European Union (WFD and MSFD). It is within these frameworks that international agreements on pollution issues, relevant for the whole catchment area of the Wadden Sea Area, are made.

Water is the principal matrix for assessing compliance with the WFD Environmental Quality Standards (EQS). The Directive on environmental quality standards in the field of water policy (Directive 2008/105/EC) underlines that sediment and biota are an important matrix for monitoring and obliges member states to set up EQS for sediment and biota where necessary and appropriate to complement the EQS set at Community level. Member states have to ensure that concentrations of priority substances and other pollutants do not increase in sediment and biota.

For the Wadden Sea, the appropriate matrix for the assessment of hazardous substances will remain sediment and biota because concentrations in water are comparatively low and show high variability (in time and space). Assessment procedures and guidelines for sediment and biota will be developed in the framework of the TMAP.

Shipping safety policies are addressed in the Chapter "Integrated management".

TRILATERAL POLICY AND MANAGEMENT

2.1 Trilateral policies for the reduction of inputs of nutrients and hazardous substances from all sources are congruent with those within the relevant EC Directives (WFD, MSFD) and the OSPAR framework. Special emphasis must be given to substances that cause unintended/unacceptable biological responses.

2.2 The current nutrient reduction policies within the framework of OSPAR, and the EC Urban Wastewater and Nitrogen Directives are supported by the EC Water Framework Directive and the new EU Agriculture Policy. In all three countries, these policies are being implemented together with national measures and programs in order to reach the Target. Special emphasis will be given to the trilaterally harmonised implementation of the relevant EC Directives, in particular with regard to monitoring and assessment at an integrated ecosystem level.

2.3 Policies for the reduction of hazardous substances, especially from riverine inputs as the quantitatively most important source, will be continued, in particular for newly developed xenobiotics. Special emphasis will be given to the trilaterally harmonised implementation of the relevant EC Directives on this issue.

2.4 The three countries will, in the framework of OSPAR and the EU, support the development and implementation of programmes and measures to reduce the input of marine litter and oil from its many sources, as well as removing litter and oil from the coastal and marine environments, also aiming at reducing negative effects on animal populations and ecosystem functions.

Pollution from ships

2.5 With the aim of eliminating operational pollution and minimizing accidental pollution, the obligatory installation of AIS (Automatic Identification System) on ships since 2005 is an additional, informative, valuable and comprehensive tool for surveillance of ship traffic.

2.6 Harbours bordering the Wadden Sea have adequate facilities to handle all types of residues and wastes generated by ships to meet the requirements of the MARPOL Convention.

2.7 To prevent spills of oil and other hazardous substances, residual materials and litter to the aquatic environment and wildlife, activities aiming at improving enforcement (surveillance and prosecution) of agreed regulations and policies to combat illegal discharges will be continued.
2.8 The three countries will support IMO initiatives with the goal to reduce ship emissions as much as and as quickly as possible both on sea and in the harbours.

Dredging and dumping of dredged material

2.9 The three countries will develop and apply national criteria with regard to dredging operations and disposal of dredged material. They will cooperate within the framework of existing international agreements and organizations by exchanging information about their main experiences with the implementation of these criteria.

2.10 Dredged material from the Wadden Sea Area and Wadden Sea harbours will, in principle, be re-located within the system unless the contamination exceeds national criteria levels. Dredged material may be used for coastal defence measures and infrastructure works if appropriate.

Discharges from oil and gas exploration and exploitation activities

2.11 The exploration and exploitation of the energy resources in the North Sea, as well as in the Wadden Sea Area, has to comply, at least, with the international agreements in the appropriate fora. This results inter alia in a prohibition on discharging oil-based muds and cuttings. Dumping or discharge of water based muds and/or cuttings is only allowed in line with relevant OSPAR agreements.

2.12 The leaching of toxic substances from protective coatings of pipelines and other installations will be avoided by the use of appropriate materials.

2.13 In the Nature Conservation Area, offshore activities that have an adverse impact on the Wadden Sea environment will be limited and zero-discharges will be applied. In the Wadden Sea Area outside the Nature Conservation Area, discharges of water-based muds and cuttings will be reduced as far as possible, by applying Best Available Techniques and by prohibiting the discharge of production water from production platforms.
3 Salt Marshes

THE HABITAT

The habitat type salt marsh includes all mainland, island and hallig salt marshes, including the pioneer zone. The brackish marshes in the estuaries are also considered part of this habitat type.

All salt marshes are part of Natura 2000 areas and covered by the habitat types 1310 (Salicornia and other annuals colonising mud and sand), 1320 (Spartina swards), 1330 (Atlantic salt meadows) and mainly within the saltmarshes 1150 (coastal lagoons), for which national conservation objectives have been elaborated.

In addition, in The Netherlands, salt marshes (both area and quality) are considered as part of the quality element “angiosperms” within the Water Framework Directive (WFD), which is one element to assess the ecological status of water bodies. In Germany this is recently under discussion.

Salt marshes form the upper parts of the intertidal zone and the supralitoral, the interface between land and sea, and are strongly controlled by geomorphological, physical and biological processes, such as sedimentation in interaction with the vegetation, tidal regime and wind-wave pattern. They constitute a habitat for a wide range of organisms. On a European scale, of some 1000 plant species that are bound to coastal habitats, nearly 200 are restricted to salt marshes. The highest species diversity in salt marshes is found among the invertebrate fauna; about 1500 arthropod species inhabit salt marshes, of which a considerable number are restricted to this habitat. Salt marshes provide valuable and irreplaceable resting, breeding and feeding grounds for many bird species which are typical for the Wadden Sea. In addition, the natural salt marshes may be of importance as nursery and feeding ground for fish and for coastal flood defence and protection.

NATURALLY DEVELOPING SALT MARSHES have a drainage system of irregular, winding gullies, a zonation of subtypes reaching from a pioneer zone up to higher saltmarshes and in most cases transition to dunes, and - in the course of time - formations of salt marsh cliffs between older parts on the one side and pioneer zones on the bordering tidal flats on the other. Natural salt marshes can be found on the islands on the landside of dune areas and, in some places, along the mainland coast.

FORELAND SALT MARSHES are salt marshes which have developed or which development has accelerated through active human interference, like shelter by means of brush wood groynes on mudflats with an artificial drainage from the beginning of their development. They are mainly situated in places where natural developments would not have led to salt marsh formation.

SUMMER POLDERS are embanked parts of the salt marshes with dikes that are high enough to prevent flooding during the growing season. The frequency of inundation varies between only once per 2 or 3 years to several times per year, depending on the height of the dikes.

In many cases summer polders do not have a typical salt marsh vegetation.

THE TARGETS

- To maintain the full range of variety of salt marshes typical for the Wadden Sea landscale.
- An increased area of salt marshes with natural dynamics.
- An increased natural morphology and dynamics, including natural drainage of mainland salt marshes, under the condition that the present surface area is not reduced.
large areas of natural and man-made salt marshes have been embanked in the past. This has not only caused a considerable loss of this typical Wadden Sea habitat, but also reduced the volume of the tidal area considerably. These losses have been compensated for, at least partly, on the islands where new natural salt marshes developed in the shelter of sand dikes and on the mainland through the stimulation of sedimentation. Most of the island salt marshes have developed in a natural way. Most mainland salt marshes are man made and have developed by being protected by brushwood groyne. As a result of their artificial drainage patterns, their morphology differs to natural salt marshes. Exceptions are the area between the Varde river estuary and the peninsula of Skallingen in the far north, salt marshes at the western end of Eiderstedt and in some coastal parts of Dithmarschen in front of brushwood groyne.

The main interference with the natural development of salt marshes and summer pol- ders is caused by coastal flood defence and protection. Salt marshes and summer dikes are important elements for coastal flood defence and protection. Salt marshes constitute an alternative to protecting the dike foot with hard constructions if the security of the dike is guaranteed.

Agricultural activities, mainly intensive grazing and mowing and the then necessary drainage, but also the application of fertilizer and pesticides, affect the natural vegetation structure and, consequently, the faunal composition.

Although different management tools (including hands-off management) are applied in different parts of the Wadden Sea, the approach to salt marsh management can be regarded as a common one to achieve the Targets. Since the mid 1980s, the Wadden Sea salt marshes in most areas have increased. Local losses occurred and were mainly due to poor sedimentation conditions or to erosion of the intertidal flat area adjacent to the marsh.

In general, livestock grazing, mowing and artificial drainage have decreased in the entire Wadden Sea since the 1980s and the salt marshes now support a variety of more naturally distributed vegetation types. Ageing of salt marshes (a development of vegetation which is dominated by some single species after cessation of farming but continuation of artificial drainage) is considered to be a problem in some areas and will require more attention in salt marsh management in future. This is valid mainly for salt marshes with artificial drainage, high sedimentation rates and lacking rejuvenation processes.

The role of saltmarsh gullies for juvenile fish is still largely unknown.

In Denmark the current conservation status according to the Habitats Directive is unfavourable-bad for Habitat Type 1330.

In Germany the conservation status of Types 1310 and 1320 is favourable and of Type 1330 unfavourable-inadequate.

In The Netherlands the conservation status of Habitat Type 1310 is favourable, for Type 1330 unfavourable-inadequate and for Type 1320 unfavourable-bad.
of artificial salt marshes through further cessation of intensive grazing where possible, reduction of artificial drainage in salt marshes without any agricultural use, and de-embankment of summer polders where this is appropriate and compatible with the needs of coastal flood defence and protection.

Outbankment of summer polders, excluding the summer dikes of the Halligen, because these protect the inhabitants, is an effective way to enlarge the salt marsh region.

The present forelands can be protected against extensive erosion because the size of the man-made salt marshes along the mainland is still less than the total size before the embankments started. Brushwood groins in exposed positions in front of artificial salt marshes prevent erosion and also mitigate effects of stronger sea level rise.

It is important to increase natural dynamics in conjunction with dune areas and tidal flats, to allow adaptation to sea level rise and to achieve favourable conservation status where not interfering with the protection of the islands.

The width of the salt marsh is important in order to maintain or enhance zonal diversity and to slow down ageing. Sedimentation rate on the salt marshes should be sufficient to keep pace with sea level rise.

With respect to saltmarsh management it is recommended to allow dynamic processes as far as possible. If saltmarsh works are necessary, sedimentation fields with brushwood groynes should be applied if feasible. In addition, the artificial drainage in sedimentation fields should be kept to a minimum.

The assessment of the Target of a more natural vegetation structure, as well as the relevant N2000 conservation objectives, require further data analysis based on harmonised criteria. Such a Wadden-Sea-wide harmonised assessment of salt marsh development will be carried out using a common vegetation typology.

Regional salt marsh management plans have proven to be important for harmonising the interests of nature protection and coastal defence for parts of the Wadden Sea. In order to further implement the Targets, as well as achieving a good ecological status, such plans should be developed for all parts of the Wadden Sea.

The function of saltmarsh gullies for spawning and juvenile fish should be better elucidated.

TRILATERAL POLICY AND MANAGEMENT

3.1 The general trilateral policy regarding salt marshes aims at adequately protecting the full range of variety of salt marshes in order to allow natural processes to take place within this habitat, with special emphasis on flora and fauna and by this maintain or restore a favourable conservation status.

3.2 Regional salt marsh management plans should be established for all Wadden Sea salt marshes, insofar this has not yet been done. These plans will contain, amongst others, Best Environmental Practice in salt marsh protection and development, taking account of experiences with local concepts and measures, as well as coastal flood defence and protection requirements, particularly focusing on possible impacts of sea level rise.

Salt Marsh Area

3.3 The trilateral policy takes as a starting point that the present area of salt marshes will not be reduced and that, where possible, the area of salt marshes with natural dynamics will be extended.

3.4 The long-term goal is to maintain or restore a favourable conservation status for all salt marshes by limiting human interference, except for the edges which may need protection against erosion. In working towards this long-term goal, the interest of coastal flood defence and protection, cultural history and private rights should be taken into account.

3.5 An increase of the salt marsh area with natural dynamics will be aimed for through the restoration of salt marshes, for example by opening summer dikes or by removing...
sand dikes, provided that it is in line with the Targets for the region, socio-economic conditions and coastal flood defence and protection requirements. The Halligen are protected by summer dikes for the security of the inhabitants. There is no intention to open these dikes.

Natural Dynamics and Natural Diversity

3.6 The natural drainage of salt marshes will be increased by reducing artificial drainage works where possible and practicable. Artificial structures, allowing predators to reach areas which they could not use under more natural conditions, may not be constructed, respectively removal considered where possible.

3.7 It is the aim to reduce and/or diversify grazing in order to increase the natural dynamics or the diversity of vegetation and associated animal species in salt marshes, reflecting the geomorphological conditions of the habitat with the exception of those areas where grazing is necessary for coastal flood defence and protection measures. Economic dependences of farmers will be taken into account.

3.8 Disturbance and damage caused by recreation and tourism will be further reduced by information systems and/or temporal and spatial zoning e.g. network of trails and routes. (Identical with 4.31 and 5.6)

3.9 The application of natural and artificial fertilizers and pesticides and other toxic substances on the salt marshes will be stopped.

Coastal Flood Defence and Protection

3.10 The interests of nature protection and sea defence measures will be further harmonised, through e.g. regional salt marsh/foreland management plans, giving priority to the safety of the inhabitants.

3.11 As a principle, it is prohibited to embank salt marshes and the loss of biotopes through sea defence measures will be minimised. Reinforcement of existing dikes will be carried out on the location of existing dikes and, preferably, on the land side. (Identical with 4.3)

3.12 The application of Best Environmental Practices for coastal flood defence and protection will be enhanced.

3.13 In general, clay for sea defence will be extracted behind the dikes. In special cases, i.e. where there is urgent and sudden need and if no other deposits behind the dikes are available, or if the extraction of suitable material is ecologically balanced, the extraction of clay may be allowed in front of the dike. In this case, the extraction shall be carried out in such a way that the environmental impact is kept to a minimum and permanent or long lasting effects are avoided and, if this is not possible, compensated. Additional regional regulations may complete this policy.

Infrastructural works

3.14 New infrastructural works which have a permanent or long-lasting impact should not be established in salt marshes.

3.15 Infrastructural works which are necessary for the supply of the islands and the Halligen with, amongst others, gas, water and electricity, or other utilities, shall be carried out in such a way that the environmental impact on the Wadden Sea is kept to a minimum and permanent, or long lasting, impacts are avoided. (Identical with 4.20)

3.16 New licenses for the construction of pipelines in the salt marshes for the transport of gas and oil shall not be issued unless in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest including those of a social or economic nature.
3.17 To concentrate cable crossings through the Wadden Sea within a minimum of cable corridors and a minimum of cables, using the best available techniques, e.g. cables with highest capacity available, and avoiding salt marshes crossing as far as possible, and to communicate regularly on this item in order to use synergies. (Identical with 4.19; 5.10; 7.3)

3.18 The construction of wind turbines in the Nature Conservation Area is prohibited. (Identical with 4.17; 7.4; 8.4; 9.11)

3.19 The construction of wind turbines, in the Wadden Sea Area outside the Nature Conservation Area, is only allowed, if important ecological and landscape values are not negatively affected. (Identical with 4.18; 7.5; 8.5; 9.12)
4 Tidal Area

THE HABITAT

The tidal area covers all tidal flats and subtidal areas. The border of the North Sea side is determined by an imaginary line between the tips of the islands. The borders to the estuaries are determined by the average 10‰ isohaline at high water in the winter situation.

Most of the tidal area is designated as a Natura 2000 area (see Map 4). National Conservation Objectives have been defined for Habitat Types 1110 (sandbanks which are slightly covered by sea water all the time), 1130 (estuaries), 1140 (mudflats and sandflats not covered by seawater at low tide), 1150 (coastal lagoons), 1160 (large shallow inlets and bays) and 1170 (reefs).

The entire tidal area has been assigned to 4 types of coastal water bodies and in the estuaries one type of transitional waters under the Water Framework Directive.

The tidal area, with its ever-changing pattern of tidal flats, gullies and open water, is the most characteristic habitat of the Wadden Sea. At low tide, the tidal flats cover about two thirds of the tidal area. The tidal flats of the Wadden Sea form the largest unbroken stretch of mudflats worldwide.

As a result of the daily tides and the open connection with the North Sea, the tidal area is very dynamic. It is exposed to natural impacts such as ice winters, strong gales and extreme changes in temperature.

A characteristic feature of the Wadden Sea tidal area is its high biological productivity, which is the main reason that the Wadden Sea is an important nursery area for North Sea fish and for the high numbers of breeding and migrating birds which feed in the area. Distinctive biological features of the tidal area are, amongst others, mussel beds, and Zostera fields. At low tide, the tidal flats are important feeding, roosting and/or moulting areas for birds and seals.

THE TARGETS

- A natural dynamic situation in the tidal area.
- An increased area of geomorphologically and biologically undisturbed tidal flats and subtidal areas.
- A natural size, distribution and development of natural mussel beds, Sabellaria reefs and Zostera fields.
- Targets for the harbour seal, the grey seal and the harbour porpoise, see Chapter Mammals.
- Targets for migrating and breeding birds, see Chapter Birds.
- Targets for fish, see Chapter Fish.

Tidal area Targets are consistent with the quality objectives of the WFD and relevant national conservation objectives for tidal area habitat types. The targets are also consistent with the World Nature Heritage criteria VIII – X. There are differences in the designation of relevant Habitat Types between Wadden Sea countries, as well as size and number of water bodies (see further “Status and Assessment”).

STATUS AND ASSESSMENT

Geomorphology

The tidal area between the mainland and the islands is characterized by a high degree of natural dynamics. The positions and structures of tidal channels and shoals and emerging sand banks are changing continuously. The total area of the intertidal flats is almost the
same as in the mid 1980s. Since then no further embankments of tidal areas have been carried out. However, there seems to be a general depletion of fine-grained material close to the mainland coast due to hydromorphological changes as a combined result of land reclamations in the past and sea level rise.

The tidal area is a sediment importing system and has, therefore, been able to compensate for the subsidence of the sea bottom. Accelerated sea level rise, expected as a result of climate change, will most probably increase the sediment importing demands. Current sea level rise is about 20 cm/100 years. The system may be able to compensate for sea level increases of up to approximately 50 cm/100 years (a level that will considerably vary among different tidal basins), but higher levels will possibly result in a loss of tidal flats and a transition to a coastal lagoon system. As most recent prognoses for sea level rise vary from 50 to 130 cm/100 years, the long term functionality of the area may be affected.

During the past decades, sand extraction has steadily declined. Still, a certain amount of sand is used for purposes of coastal protection, e.g. beach nourishment, dike and (on the Halligen) dwelling mound reinforcement.

The exploitation of natural gas in and adjacent to the Wadden Sea, effects in a subsidence of the sea floor. Investigations show that this subsidence of tidal flats has been fully compensated by natural sedimentation until now.

Biology

Mussel beds, seagrass meadows and Sabellaria reefs

In the past, numbers and size of mature mussel beds have seriously declined all over the Wadden Sea, although there are regional differences. The lack of spatfall since 1999, fishing for seed mussels in some areas, as well as some winters with heavy storms, have played a role. In the past 10 years, a slow recovery of intertidal mussel beds has occurred in some areas, though in others the decline is ongoing, despite a reduction of seed mussel fishery.

The situation of stable subtidal mussel beds is largely unknown.

In the past, Sabellaria reefs and seagrass meadows in the Wadden Sea have also seriously declined, the latter varying between regions with most declines in south-western parts. It is unclear what the main causes for the decline in Sabellaria reefs and seagrass meadows have been. A slow recovery of seagrass stands has been observed, for which the improved water quality is deemed responsible. Sabellaria forming reefs are actually very rare, though single individuals are found.

Generally, there is insufficient knowledge of the situation of the sublittoral part of the tidal area.

Temperature

Average temperatures in the Wadden Sea have increased as a result of global warming. Climate change may stress the present structure and functioning of the food web and may result in a cascade of yet unknown effects. For example, the response of organisms and of the ecosystem as a whole may not only depend on absolute shifts in temperature, but on the phasing of the new temperature regime (tidally, daily and seasonally) with other key variables as well.

Alien species

Although the present knowledge about the extent, patterns and mechanisms of aquatic bioinvasions is still in its infancy, it is clear that aliens are a significant force for change in aquatic communities globally. At the North Sea coast, many of the introduced species, mainly algae and invertebrates, arrived via shipping or via aquaculture. They most often became established within estuaries and on hard substrates, with more than 80 known species, of which about 52 also occur within the Wadden Sea. Of the 52 known introduced species, six have already had, or are about to have, effects on the composition of the existing biota in the Wadden Sea. These species differ in their effects, some of which may be of a dynamic character. Global warming may benefit some species, resulting in further
changes in dominance. Some introductions have become extremely numerous locally. In particular, pacific oysters are found today in all parts of the Wadden Sea, mainly on oyster beds and natural mussel beds, leading to the most obvious change in the community structure of mussel beds. It is as yet unknown what the community effects will be. There is, however, no evidence that introduced species have caused the extinction of natives in the Wadden Sea.

Human Activities

There are several human activities taking place in the tidal flat area. Those which cause adverse effects are regulated in time and space or, as appropriate, are prohibited by national laws. Where appropriate, activities are subject to licensing following an assessment of their impact on the Wadden Sea in accordance with the stipulations of the Habitats Directive.

In addition, there are some activities such as leisure activities, civil air traffic, fishery, military activities, hunting and laying of cables that may potentially cause disturbance to the Nature Conservation Area. For many of these activities the natural dynamic processes which change the Wadden Sea over time have to be taken into account.

The most prominent touristic activities in the tidal area are boating and mudflat-walking. Flat walking takes place mainly near the recreational beaches and on guided tours on defined routes.

Though the construction of new wind turbines is not allowed within the Nature Conservation Area, it can be expected that cables from planned and anticipated wind farms in the North Sea will have to cross the Wadden Sea in most cases. It is also unavoidable that additional cables and pipelines for supplying the islands will be constructed through the Wadden Sea Area and, subsequently, also maintained. The construction of such infrastructure installations is subject to assessment and permission under the Habitats Directive. It is the aim to minimise the construction and maintenance effects as far as possible.

Fishery may affect the natural environment of the Wadden Sea. Most important fisheries within the Nature Conservation Area are for blue mussel and shrimp.

Shrimp fishery is allowed in the Dutch and German Wadden Sea with the exception of defined zero-use zones and is limited in Denmark to the area between the islands and in the offshore area. The planned WSP project in 1997 could not be conducted due to a lack of funding. Thus, there are still open questions on the influence of shrimp fishery on bottom fauna and potential to further reduce the bycatch, which is mainly fish.

Mechanical cockle fishery has been phased out in most parts of the Nature Conservation Area. Limited non-mechanical commercial cockle fishing (by hand digging) is allowed and regulated in The Netherlands. In other parts of the Area, non-mechanical cockle fishing is limited to private use only in accessible areas of the tidal flats.

The policy of the three countries, including the needs of the Habitat Directive for blue mussel fishery and aquaculture since the Wadden Sea Plan of 1997, aimed for a sustainable and ecologically sound mussel fishery. In general, major parts of the intertidal are closed for blue mussel fishery, the area of mussel culture lots has been stable or is reduced and seed mussel fishery is regulated.

In Denmark, the mussel fishery takes place only at natural mussel beds (five licenses) and has for the time being been suspended (2009) due to stock decrease. According to the actual legislation, dispensation may be acquired to fish in three well-defined areas. In Hamburg, mussel fisheries is forbidden by the National Park Act. In Schleswig-Holstein, Niedersachsen and The Netherlands mussel management programmes have been implemented and are being or will be updated.

Hunting is prohibited in the Nature Conservation Area, with the exception of a few areas. Further exemptions for hunting for wildlife management and pest control are possible in the whole area.

The extent of military activities has been significantly reduced over the last years. There are a few exercise areas such as the shooting range “Vliehors” on the island of Vlieland or the tidal area in front of the Meldorfer Bucht in Dithmarschen. All activities are limited
in time to take account of the breeding and moulting times for birds and seals. In the Danish Wadden Sea, military activities take place on the northern part of the island of Rømø. Here, air-to-ground training sessions are regularly performed, but they are strictly limited in time.

**EC Directives**

**Differences in implementation**

The main differences in the national designation of the Habitats Directive for the tidal area are:

- **NL** has designated the tidal area as Habitat Types 1110 (sublittoral banks) and 1140 (eulittoral banks) only. NL has explicitly included the protection of sublittoral mussel beds in Habitat Type 1110;
- In **Germany** and **Denmark**, additionally Types 1130, 1160 and 1170 have been designated. Germany has designated sublittoral mussel beds as Habitat Type 1170. Following the recent clarification on the common definition of 1170 at EU-level, the designation of eulittoral mussel banks as reefs in Germany will be revised at the next revision of the standard data forms.

With regard to the Water Framework Directive, size and number of water bodies in the tidal area differ between NL (6 water bodies), D (18 water bodies) and DK (4 water bodies). There are no transitional water bodies in DK. In principle, the WFD and WSP address the same area – the tidal area. There is an overlap with the offshore area and estuaries as defined in the WSP.

**Conservation status**

In Denmark, the conservation status of HD Types 1110, 1130, 1140, 1160 and 1170 has been classified as unfavourable-bad. The status of Type 1150 is unknown.

In Germany, the conservation status of Habitat Types 1110, 1160 and 1170 is unknown, for Type 1140 it is favourable.

In The Netherlands, HD Types 1110 and 1140 are assessed as unfavourable-inadequate.

**HOW TO PROCEED**

In the framework of the trilateral cooperation, a large number of measures to counteract the negative effects of human presence in the area and the exploitation of natural and mineral resources has been agreed upon.

In the light of impacts of climate change, additional or amended policies are desirable for the management of the tidal area, in particular taking account of substantial changes in the ecosystem and, consequently, dealing with HD Conservation Objectives. Such policies must be carefully tuned with those concerning the dynamic situation in the offshore area, beaches and dunes, salt marshes and estuaries.

Furthermore, a better management of characteristic tidal area communities, especially natural mussel beds, *Zostera* fields and *Sabellaria* reefs, is necessary for an effective implementation of the relevant Targets.

In light of the ecological importance of the sublittoral part of the tidal area, a more harmonised trilateral management is necessary.

Major challenges for the future tidal area policies are to collect relevant knowledge of the subtidal natural values, to develop harmonised assessment methodologies, and to specify and harmonise relevant Conservation Objectives in order to have a common approach between the Wadden Sea States.

The WFD transitional waters cover partly the tidal area and partly the estuaries. This overlap has to be clarified in the Wadden Sea also in connection with the Habitat Directive areas in the estuaries.
In the development of the WFD assessment tools, various approaches and methods are under discussion to define a water body type-specific reference condition and good ecological status.

It is the overall aim to harmonise these different approaches at the trilateral level to produce comparable results.

For invasive alien species, new trilateral policies will be developed (see Chapter Integrated Management).

The development of fisheries into the direction of more sustainable activities in the Wadden Sea has started and will be continued. Existing national management plans and policies for mussel fisheries are regarded as a step into this direction.

In The Netherlands, policy for mussel seed collectors will be further developed in conjunction with the transition of the mussel fishery and the Nature Recovery Programme Wadden Sea between 2009-2020.

National policies regarding the import of seed mussels are different.

Trilateral principles for sustainable shrimp fisheries should be developed in cooperation with the fisheries sector.

The management of seals in the tidal area is covered by the Trilateral Seal Management Plan. This plan is amended and updated at regular intervals.

TRILOCAL POLICY AND MANAGEMENT

Natural Dynamics and Coastal Flood Defence and Protection

4.1 Trilateral policies will, as a principle, be based on an integrated approach to coastal defence and nature protection on the mainland coast, the islands and the offshore zone taking into account the water management of the inland.

4.2 Future trilateral policies will aim at increasing the resilience of the Wadden Sea to impacts of climate change, in particular by promoting the development of natural dynamics.

4.3 Embankments of tidal areas will, as a principle, be prohibited and the loss of biotopes through sea defence measures minimised. Reinforcement of existing dikes will be carried out on the location of existing dikes and, preferably, on the land side. (Identical with 3.11)

4.4 Permission for small-scale modifications of jetties, piers and other infrastructural works along the Wadden Sea coast shall only be given after a careful review of all interests.

4.5 Permission for new permanent structures, which may influence the natural dynamics in the tidal area of the Nature Conservation Area, will not be granted unless for imperative reasons of overriding public interest and if no alternative can be found. Permission for new permanent structures, which are likely to have significant effects on the natural dynamics in the tidal area outside the Nature Conservation Area, will only be granted after having been made subject to an assessment in accordance with the EC Directive on Environmental Impact Assessment.

Shipping, Harbours and Industrial Facilities

4.6 The extension, or major modification, of existing harbour and industrial facilities and new construction shall be carried out in such a way that the environmental impact is kept to a minimum and permanent, or long lasting, effects are avoided and, if this is not possible, compensated.

4.7 Shipping routes and harbours are to be managed for their intended purposes, including the necessary maintenance of shipping routes; in doing so, negative impacts should be avoided, as far as possible.

Navigation dredging operations should aim at allowing natural processes to run their course, as far as possible.
4.8 New shipping routes to the harbours and the Wadden Sea islands will, in principle, not be dredged unless the present routes threaten to disappear or for shipping safety reasons.

4.9 In shipping links across the water shed and other not designated routes that exist by virtue of natural dynamics in principle, no dredging operations will be carried out.

4.10 Speed limits within the tidal area have been imposed where such is deemed necessary.

Mineral Extraction and Infrastructure

4.11 In the Nature Conservation Area, new exploitation installations for oil and gas will not be permitted.

For the area of the World Heritage property, Germany and The Netherlands have confirmed their commitment not to explore and extract oil and gas at locations within the revised boundaries of the nominated property in line with law in force.

4.12 In the parts of the Nature Conservation Area not being designated as World Heritage Property exploration activities are permitted in accordance with national legislation if it is reasonably plausible that deposits can be exploited from outside the Nature Conservation Area. Net loss of nature value must be prevented. Therefore, exploration activities will be regulated in space and time. Associated studies, mitigation and compensation measures should be carried out where appropriate.

4.13 In light of the expected acceleration in sea level rise and the consequent increased sand demand of the system, trilateral policies generally take as a starting point that sand is not removed from the Nature Conservation Area.

4.14 The extraction of sand in the Nature Conservation Area will be limited to the dredging and maintenance of shipping lanes. This sand can be used for, inter alia, sea defence purposes. In specific cases, sand may also be extracted for sea defence purposes. The extraction of sand in the Wadden Sea Area outside the Nature Conservation Area should make maximum use of sand generated by the maintenance of shipping lanes. It should be carried out in such a way that the environmental impact is kept to a minimum and permanent, or long lasting, effects are avoided and, if this is not possible, compensated.

4.15 Small scale extractions of mud and sea water for medical purposes and of sand remain licensable following national legislation.

4.16 The construction of pipelines shall be such that the environmental impact on the Wadden Sea ecosystem is kept to a minimum and permanent, or long lasting, negative impacts are avoided, and if this is not possible, compensated. In the Nature Conservation Area, new licenses for the construction of pipelines in the tidal area for the transport of gas and oil shall not be issued unless in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature.

4.17 The construction of wind turbines in the Nature Conservation Area is prohibited. (Identical with 3.18; 7.4; 8.4; 9.11)

4.18 The construction of wind turbines, in the Wadden Sea Area outside the Nature Conservation Area, is only allowed, if important ecological and landscape values are not negatively affected. (Identical with 3.19; 7.5; 8.5; 9.12)

4.19 To concentrate cable crossings through the Wadden Sea within a minimum of cable corridors and a minimum of cables using the best available techniques, e.g. cables with highest capacity available, and to communicate regularly on this item in order to use synergies. (Identical with 3.17; 5.10; 7.3)
Infrastructural works which are necessary for the supply of the islands and the Halligen with, amongst others, gas, water and electricity, or other utilities, shall be carried out in a way that the environmental impact on the Wadden Sea is kept to a minimum and permanent, or long lasting, impacts are avoided. (Identical with 3.15)

Dredged Material

The impact of re-location or dumping of dredged materials will be minimised. Criteria are, amongst others, appropriate dumping sites and/or dumping periods. This has been implemented on national level through joint concepts for dredged materials for marine and coastal waters. (Identical with 6.4)

Mussel, Cockle and Shrimp Fishery

Cockle fishery is not allowed in the Wadden Sea Area, with the exception of mechanical fisheries in some small areas along the Esbjerg shipping lane and in the Ho Bay, and in Niedersachsen outside of the conservation area (but will not be carried out at present), as well as non-mechanical cockle fishing in The Netherlands. (Identical with 9.5)

The effects of mussel fishery are limited by the permanent closure of considerable areas and the reservation of sufficient amounts of mussels for birds. In addition, the management of fishery on mussels should not be in conflict with protecting and enhancing the growth of natural mussel beds and Zostera fields. (Identical with 9.6)

Mussel fishery will, in principle, be limited to designated parts of the subtidal area. Based on national management plans, fishery on the tidal flats and parts of the sublittoral may be granted. The fishery sector will, in close cooperation with competent authorities, improve existing practices in such a way that impacts of mussel fishery in general and seed mussel fishery in particular, will be minimised. (Identical with 9.7)

The current area of mussel culture lots will not be enlarged.

The existing permit for oyster culture in Schleswig-Holstein will remain in force. New permits will not be granted.

In order to reduce bycatch and to reduce impact on the sea floor, trilateral policy principles for a sustainable shrimp fishery will be developed in close cooperation with the fisheries sector. (Identical with 11.3)

Tourism and Recreation

The recreational values of the Wadden Sea will be maintained for the benefit of man and nature. To this end in the Nature Conservation Area,

- in the ecologically most sensitive areas, zones have been or will be established where no recreational activities, including excursion ships and recreational boating, is allowed;
- the use of jet skis, water skis and similar motorized equipment has been, or will be, prohibited, or limited, to small designated areas;
- new marinas will be avoided and the extension of the existing marina capacity will only be allowed within the approved levels;
- water sports, like wind surfing have to be balanced with the needs of nature protection and bathing tourism;
- Kitesurfing can distort nature values, in particular roosting sites for birds. The aim is a harmonised approach to kitesurfing consisting of zoning where the activity is allowed under conditions. (Identical with 9.21 and 10.5)

Speed limits for ships have been imposed, taking into account safety, environmental recreational and fishery factors. (Identical with 9.22 and 10.6)
4.30 The negative effects of hovercraft and hydrofoil craft and other high-speed craft are minimised by the following strategies:

- In The Netherlands and Germany, hovercraft and hydrofoil craft are forbidden in the tidal area of the Nature Conservation Area; new, other high speed craft are forbidden (in Germany) outside the designated shipping routes in the area (in The Netherlands);

- In Denmark, applications for new, high-speed craft can only be granted on the basis of an Environmental Impact Assessment and if it is not in conflict with the nature protection targets for the area.

4.31 Disturbance and damage caused by recreation and tourism will be further reduced through information systems, and/or temporal and spatial zoning, e.g. network of trails and routes. (Identical with 3.8 and 5.6)

4.32 Experience of nature and landscape should be made possible by appropriate measures. It is the aim to guide recreational activities and tourism by information systems, as well as temporal and/or spatial zonation, routing systems and field guidance in such a way that people can enjoy unspoiled nature, and disturbances and damages are minimised.
5 Beaches and Dunes

THE HABITAT

Beaches and dunes include beaches, sandbars, beach plains, and different types of dunes including humid dune slacks. Most beaches and dunes are situated on the North Sea side of the barrier islands. Mainland beaches and dunes can be found on the Skallingen and Eiderstedt peninsulas and near Cuxhaven.

Almost all dune areas have been designated as Natura 2000 areas under the Birds and Habitats Directives and National Conservation Objectives have been adopted for Habitat Types 2110 (embryonic dunes), 2120 (white dunes), 2130 (grey dunes), 2140 (decalcified fixed dunes with *Empetrum nigrum*), 2150 (Atlantic decalcified fixed dunes), 2160 (dunes with *Hippophae rhamnoides*), 2170 (dunes with *Salix repens*), 2180 (wooded dunes of the Atlantic, Continental and Boreal region) and 2190 (humid dune slacks). For beaches, HD types 1150 (coastal lagoons), 1220 (perennial vegetation of stony banks), 1310 (*Salicornia* and other annuals colonising mud and sand) and 1330 (Atlantic salt meadows) are relevant.

Sandy beaches are the most dynamic physical system of the seashore. Coastal dunes develop where sand is mobilised at dry beaches and blown landwards, trapped by shells or plants and giving rise to a succession of dunes, from embryonic to white, grey and brown.

Dunes are hot spots of biodiversity. Especially wet dune slacks are of outstanding importance because they are inhabited by a number of endangered species.

Wadden Sea island dunes have a far more natural character than those of the mainland along the Northwest European coast. The Wadden dunes are to a large extent embedded in the natural landscapes of the North Sea and the Wadden Sea.

THE TARGETS

- Increased natural dynamics of beaches, primary dunes, beach planes and primary dune valleys in connection with the offshore zone.
- An increased presence of a complete natural vegetation succession.
- Targets for Birds, see chapter Birds.

Few differences exist in the designation of HD dune types. Some types are not present in all three countries or only in very small areas with smooth transitions to other types. The national conservation objectives are largely consistent with the Targets. The Targets for beaches and dunes are consistent with the World Heritage criteria VIII, IX and X.

STATUS AND ASSESSMENT

The dune Targets of increased natural dynamics and of an increased presence of a complete natural vegetation succession have not yet been reached. This is mainly due to:

- Stabilization of dunes resulting in decreasing dune dynamics (mainly due to coastal defence measures);
- Decrease of ground water level and impacts on dune slacks (due to water extraction);
- Eutrophication of dunes by atmospheric deposition, leading *inter alia* to increased moss coverage;
• Fragmentation of dune habitats;
• Invasive alien species;
• Mass development of rabbits on some islands.

Many of the Atlantic coastal dunes are unnaturally stable. About two-thirds of the coastal dunes consist of mid- and late successional dune types. Important other types, in particular embryonic dunes and species-rich dune slacks and also grey dunes in typical appearance, are absent or show a further decline. Wet dune valleys become more and more dry.

The main reason is that dunes and beaches have an important coastal flood defence and protection function and consequently the dynamics of the coastal zone have been restricted, especially near inhabited areas, areas of drinking water extraction, buildings and other artificial structures.

The effect on the flora and fauna is that species typical of open sand dune grassland or heath are replaced by scrubs and secondary woodland. The avoidance of penetration of salt water in areas of drinking-water extraction increases unnatural ageing of dunes. If younger dune stages are not sufficiently present, biodiversity in dunes and salt marshes, not only of higher plants but also of mosses, lichens and insects, may be lower or declines. Nowadays some of the most characteristic species, also some of the birds typical for open dunes, have vanished from the Wadden Sea islands.

In areas where coastal defence measures have been reduced, natural dynamics have increased.

Especially wet dune slacks are of outstanding importance because they are inhabited by a number of endangered species which have become rare during the last decades because of habitat loss, stabilization of dunes and lowering of groundwater table through drinking water extraction.

Over the last century all Northwest-European dune ecosystems have experienced changes due to increased nutrient deposition, planting of conifers, grazing pressure, or invasion of non-native species such as *Rosa rugosa*.

Long-term nitrogen deposition has a strong potential to reduce plant species richness. Fast-growing species like grasses outcompete slow-growing species, usually small herbs and lichens. Generally N-sensitive vegetation has declined in semi-natural ecosystems in Europe. Examples are heath, grasslands and fens.

There is a considerable extent and diversity of sandy beaches in the Wadden Sea Area. The biota is distinctly different in composition from that of the offshore belt and the tidal area. Beaches contribute considerably to overall faunal diversity with unique forms of life. In contrast to tidal flats, organisms have little effects on their habitat. Physical factors select the forms of life, most of which are rather small. Two of the most threatened breeding bird species in the Wadden Sea Area, the Kentish plover and the little tern, breed mainly on beaches.

In Denmark the conservation status of all dune Habitat Types is unfavourable-bad, with the exception of 2110 and 2160 (unknown), which is mainly due to eutrophication, but there is also overgrowth, unnatural water levels/regimes, as well as lack of or reduced dynamics. In Germany, the conservation status of all dune Habitat Types is favourable with the exception of 2120 and 2190 (unfavourable-inadequate) and 2150 (unfavourable-bad). In The Netherlands, Types 1310, 2110, 2120, 2150, 2160 and 2170 have a favourable conservation status, Types 1330, 2140, 2180 an 2190 are unfavourable-inadequate and 2130 is unfavourable-bad.

**HOW TO PROCEED**

In order to implement the Targets on increased natural dynamics and natural vegetation succession, a more active policy is necessary, promoting coastal flood defence and protection techniques that allow for higher natural dynamics. In addition, active stimulation measures must be taken to enhance the dynamic situation on beaches and in dunes. Coastal management must be carefully tuned to natural values and natural processes, taking into account the priority of safety of the islands and their inhabitants.
New insights suggest that coastal defence and nature management can benefit from each other. Where safety is provided by means of nourishments, natural processes might transfer sand from the beach inland, and consequently will result in growing dunes and rising surfaces, not only in the foredunes but also inland. Therefore, nature can serve safety. Policies for sea defences and for nature management could aim for the same goals. Sand nourishments for coastal flood defence and protection contribute positively in that they stabilize dunes under stronger sea level rise. The nourished material will, after renewed erosion during storm surges, finally accumulate in the tidal area, thereby stabilising the system under sea level rise.

All dune habitats are part of the Natura 2000 network of the EC Habitats Directive. However, the conservation status in at least parts of the dune areas has been assessed as "unfavourable".

The implementation of the European Nature Conservation Directives in the Wadden Sea requires a tuning between The Netherlands, Germany and Denmark.

Additional protection of beach breeding species may be achieved through relatively simple zoning measures limited in space and time. *inter alia* closing of areas or visitor management. Similar protection measures can be applied to seals. These policies will be continued.

**TRILATERAL POLICY AND MANAGEMENT**

5.1 Dunes are protected and natural processes are allowed to take place within this habitat, with special emphasis on geomorphology, flora and fauna. To this end, HD Conservation Objectives and Best Environmental Practices will be more harmonised and commonly applied in dune protection and development.

5.2 The interests of nature protection and sea defence measures will be further harmonised, and the loss of biotopes by sea defence measures minimised, while taking into account that the safety of the inhabitants is essential.

5.3 For beaches and dunes, the trilateral policy takes into account the demands of recreation and tourism, coastal flood defence and protection and natural values, like high geomorphological dynamics and important breeding areas. Where possible, the natural situation should be increased by 'hands-off management'.

5.4 Coastal management should aim at a natural dynamic development recognizing the necessity to protect the security of the inhabitants on the islands and safeguarding the stability and the infrastructure of the islands.

5.5 In case coastal flood defence and protection is carried out, Best Environmental Practice will be applied.

5.6 Disturbance and damage caused by recreation and tourism are already managed and will be further minimised through information systems and/or temporal and spatial zoning. (Identical with 3.8 and 4.31)

5.7 Driving cars in breeding areas on beaches and in dunes is prohibited. (Identical with 9.10)

5.8 It is important to restore the natural dynamics. This could be done by *e.g.*
- allowing sand drift,
- restoring natural dune vegetation.

Coastal flood-defence and protection, existing buildings and infrastructure, as well as traditional use, are not affected.

5.9 Ground water extraction on the islands will be limited to the extent possible and will be managed in such a way that negative impacts on wet dune valleys are avoided.

5.10 To concentrate cable crossings through the Wadden Sea within a minimum of cable corridors and a minimum of cables, using the best available techniques, *e.g.* cables with highest capacity available, and to communicate regularly on this item in order to use synergies. (Identical with 3.17; 4.19; 7.3)

5.11 To aim for natural nutrient levels in dunes.
6 Estuaries

THE HABITAT

The estuaries in the Trilateral Cooperation Area are delimited on the landward side by the mean brackish water limit of the rivers, and on the seaward side by the average 10‰ isohaline at winter high water. On the landward side of the rivers, the areas outside of the main dikes or, where the main dike is absent, the spring-high-tide-water line, including the corresponding inland areas to the designated Ramsar and/or EC-Bird Directive areas, are part of the estuaries.

Estuaries include the river mouths with a natural water exchange with the Wadden Sea. Such brackish areas belong to the transition zone between rivers and tidal waters. There are five such estuaries in the Wadden Sea Area with ‘open access’ to the Wadden Sea, namely the Varde Å in the Danish Wadden Sea Area, the Eider, the Elbe and the Weser in the German Wadden Sea Area, and the Ems in the German and Dutch Wadden Sea Area.

Most of the estuarine area is designated as Natura 2000 area (see Maps 2 and 4) with respect to the Habitat Directive as well as to the Bird Directive. With exception of the Ems estuary, national Conservation Objectives have been defined for the estuarine Habitat Types, of which 1130 (estuaries) is dominating.

The entire estuarine area in The Netherlands and Germany has been assigned as transitional water bodies under the Water Framework Directive. Management plans for the rivers Elbe and Weser are in progress.

The estuaries are of high relevance for the Wadden Sea ecosystem in terms of input of nutrients and toxic substances, sediment dynamics, nursery and feeding area for Wadden Sea species on the one hand. However, the estuaries themselves are also viewed as a specific habitat, characterized by strong variability and dynamics of key factors such as salinity, tidal range, turbidity and others. From an ecological point of view they are important, e.g. for migrating species (in particular birds and fish), but additionally they are inhabited by various brackish-water and estuary-endemic species and are thus of special importance for nature protection reasons. The brackish salt marsh vegetation produces more biomass than any other salt marsh, attracting large numbers of ducks and geese.

THE TARGETS

- Protection of valuable parts of the estuaries.
- Maintaining and where possible restoring natural habitats and tidal dynamics typical of estuaries.
- Maintaining and, as far as possible, restoring the river banks in their natural state.
- Maintaining and where possible restoring the function as migration route and breeding area for fish and birds.

The Targets are consistent with the quality objectives of the WFD and relevant national conservation objectives for tidal area habitat types. The Targets are also consistent with the World Nature Heritage criteria VIII-X.

STATUS AND ASSESSMENT

Especially the smaller river outflows in the Wadden Sea Area have sluices or surge barriers that prevent natural mixing of fresh and salt water and the establishment of transition zones.

Of the five estuaries with open access to the Wadden Sea, the rivers Elbe, Weser and Ems constitute the seaward access routes to the major German sea ports and are among
the most industrialized regions of the Wadden Sea Area. The industrial development of these rivers in the last centuries has resulted in significant alterations in morphology, hydrography (including tidal amplitude), flora and fauna, amongst others as a result of deepening and embankment and fixation of river banks, including the resulting loss of brackish marshes.

By virtue of the designation of the vast majority of the foreland and water areas of the estuaries as Natura 2000 sites, the first target can be viewed as largely achieved. However, the attempts to achieve a favourable conservation status for river banks and maintenance of good water quality failed, although loads of nutrients and several contaminants have been reduced considerably during the last 20 years.

The ecological importance of the upper Ems estuary and especially of its tidal brackish water reach has drastically deteriorated over the last 20 years. The water quality (in particular the increase of suspended solids and oxygen depletion) and the aquatic fauna have been severely depleted mainly as a result of deepening of the upper estuary for shipyard purposes. There is a strong need for improvement. A storm surge barrier (also in use as a temporary tidal weir with respect to new build ships) has been constructed.

During the last 20 years the Weser ecosystem has undergone fewer changes than that of the Ems. However, further deepening has occurred and the alteration of the tidal amplitude is highest.

In the tidal freshwater reach of the Elbe estuary bad water quality (especially oxygen deficiency), high dredging volumes and further deepening have further degraded the ecological system.

The Varde Å estuary has morphologically remained in its natural state, but has for decades been subject to intensive agricultural exploitation. However, a joint agricultural and environmental project for the extensive meadows around the estuary of Varde Å was initiated during the years 1998–2002, and extensification is now taking place in almost 2,400 hectares of marshland.

The houting belongs to the most endangered fish populations of the Wadden Sea/North Sea and is one of two prioritized species under the EC Habitats Directive. Previously it was common in the Wadden Sea Area and adjacent river systems. Today it is found in the Danish part of the Wadden Sea Area and in upstream river systems in self-sustaining populations. The actual conservation status is unfavourable in Denmark. In Schleswig–Holstein, single individuals are found but there is no reproducing population.

Apart from the large estuaries, there are few natural transitions between fresh and salt water left. Some progress on modifying sluice regimes, building fish passages and restoration of brackish marshes increased the opportunities to develop habitats and species depending on natural transition zones.

Climate change will also alter the ecological situation in the estuaries due to changes in the freshwater flow regime, accelerated sea level rise, rising temperature and others. Due to climate change, adaptation measures will become necessary with respect to e.g. coastal defence. This may lead to additional impacts on the estuarine ecosystem.

In all three countries, the Conservation status according to the Habitats Directive is unfavourable-bad for Habitat Type 1130.

**HOW TO PROCEED**

Because it is necessary to maintain and restore ecological functions of estuaries and to manage shipping routes and harbours for their intended purposes, assessments of the environmental impacts of new activities, compensation and mitigation, and restoration projects are central elements in policy and management.

Management plans according to the WFD (aiming in HMWB designated waterbodies at a good ecological potential) and the HD (aiming at a favourable conservation status) are currently under development, including the planning of restoration measures. These plans should be developed in a harmonised way and should also include the freshwater tidal reaches of the estuaries.
Possibilities for reducing artificially increased tidal amplitude and tidal pumping in estuaries should be considered, as has been started in the Elbe estuary.

In the Varde Å estuary, extensification of agricultural use is in progress and will be continued.

Further progress on modifying sluice regimes, building fish passages and restoration of brackish marshes and reconstitution of spawning areas for migrating fish species is necessary.

Long-term strategies for adaptation to climate change should be developed for the estuaries.

TRILATERAL POLICY AND MANAGEMENT

The policies for important elements of the estuaries, i.e. the water, sediment and tidal flats, the salt and brackish marshes, the rural area, birds and fish, have been formulated in Target Chapters 2, 3, 8, 9 and 11 respectively. The relevant parts of these policies also apply to valuable parts of estuaries. It concerns here, in particular, dumping of dredged material, agriculture, hunting, fisheries, recreation and energy.

6.1 The extension, or major modification, of existing harbour and industrial facilities and new construction shall be carried out in such a way that the environmental impact is kept to a minimum and permanent, or long lasting, effects are avoided and, if this is not possible, compensated. (Identical with 4.6)

6.2 Large scale extractions and disposal of cooling water from power plants should be limited to a degree that is compatible with ecosystem requirements, applying best available technology to avoid incompatible heating of estuarine waters, shortage of oxygen and negative impacts on estuarine habitats and species, especially fish.

6.3 The deepening of shipping lanes in the estuaries will be carried out in conjunction with an overall assessment, according to relevant EC Directives, of how to compensate and mitigate the measures.

6.4 The impact of re-location and dumping of dredged materials will be minimised. Criteria are, amongst others, appropriate dumping sites and/or dumping periods. This has been implemented on national level through joint concepts for dredged materials for marine and coastal waters. (Identical with 4.21)

6.5 River banks will remain in and be restored to their natural state, as far as possible.

6.6 Good water quality will be maintained or restored as far as possible.

6.7 The transition zone between fresh and salt water should be as natural as possible.

6.8 Estuaries will be managed in such a way that vulnerability to climate change will be reduced.
7 Offshore Area

THE HABITAT

The offshore area ranges from seaward of the tidal area to the seaward border of the Nature Conservation Area. The border between the offshore area and the beaches on the islands is determined by the average low-tide-water mark.

Most of the offshore area is designated as N2000 area (see Maps 2 and 4). National Conservation Objectives have been defined for Habitat Types 1110 (sandbanks which are slightly covered by sea water all the time), 1140 (mudflats and sandflats not covered by seawater at low tide), 1160 (large shallow inlets and bays) and 1170 (reefs).

The offshore area has been assigned to 4 types of coastal water bodies under the Water Framework Directive. The Marine Strategy Framework Directive covers the main part of the offshore area.

The offshore area is dominated by water depths of more than 10 m. There is a close connection between the tidal area and the offshore area. This connection is clear with respect to water, geomorphology and biology. The tide causes a daily exchange of water between the Wadden Sea and the North Sea, the extent of which is modified by wind conditions. The offshore area forms one coherent geomorphological system with the tidal area. This is demonstrated by the net transport of sediment from the North Sea into the Wadden Sea.

The biology of the Wadden Sea and the North Sea is intimately linked. Phytoplankton is transported from the offshore zone to the Wadden Sea proper and, after dying off, is remineralised. The import of organic matter from the offshore zone is one of the main causes of the food richness of the Wadden Sea. Both cockles and blue mussels may restock the Wadden Sea from populations in deep water refuges in the North Sea after severe winters have decimated the population of the exposed tidal flats. Motile animals like fish, shrimps and crabs largely leave the Wadden Sea in autumn to survive the winter in the relatively warm waters of the North Sea, after which they return to the Wadden Sea. Without the high productivity in the Wadden Sea, the overall stock of these species would be greatly reduced. Birds and marine mammals demonstrate both a daily and a seasonal shift in their use of the Wadden Sea and the offshore area.

THE TARGETS

- An increased natural morphology, including the outer deltas between the islands.
- The Targets for birds, marine mammals and fish are relevant for the offshore area.
- Targets on water quality, see chapter “Water and Sediment”.

The offshore area Targets are consistent with the quality objectives of the WFD and relevant national Natura 2000 Conservation Objectives for offshore area habitat and species types. The targets are also consistent with World Nature Heritage criteria VIII – X.

STATUS AND ASSESSMENT

The natural morphology of the offshore zone is closely related to the natural dynamics in the tidal area and the beaches and dunes: there is a net transport of sand from the seaward shores of the islands up to the so-called wave base into the Wadden Sea and this transport is determined by the overall water circulation. The wave base delineates the water depth, from below which no sediment can be stirred up by waves. In consequence, no (significant amount of) sediment is moved towards the Wadden Sea from below this
line. According to CPSL (2001), the wave base is situated in the offshore area between the 10 and 15 m isobath.

Sea level rise and bottom subsidence cause a deepening of the tidal basin resulting in an increased net sand import from the offshore zone. The extraction of sand is increasingly regulated on the basis of the importance of the offshore area and for the overall Wadden Sea sand balance.

Apart from coastal defence activities on the Wadden Sea islands (e.g., cross-shore dam at Texel) no evidence has become available of any negative development in natural dynamics of the geomorphology of the offshore area.

Birds using the North Sea off the Wadden Sea have not been subject to regular monitoring. However, knowledge of the birdlife was derived through different initiatives and in national campaigns in the 1980s and 1990s and has grown enormously in recent years. Seabird species occurring in the offshore area in specific months of the year are divers, eider, scoters, gulls and terns. The sandwich terns breeding on the Wadden sea islands feed above subtidal sand banks in the off shore area.

Notwithstanding progress in protection, including the designation of the Wadden Sea PSSA in 2002, there are several activities in the offshore zone of the Wadden Sea, including shipping adjacent to the area, which can pose a threat to the area ecology. The offshore zone is important for birds in periods of food shortage. Safeguarding the food situation of (diving) birds is closely connected to the shellfish fishery in the area. Repeated inventories have demonstrated the occurrence of important stocks of the bivalve *Spisula subtruncata* along the Dutch coast, and of *S. solida* along the coast of Schleswig-Holstein. These bivalves are a major food source for diving ducks such as the common scoter and eider. For the eider in particular, these *Spisula* stocks are important for the survival when other bivalve stocks in the Wadden Sea are depleted, e.g. by severe winter conditions. *Spisula*-populations can show big natural fluctuations, e.g. *Spisula solida* off the coast of Schleswig-Holstein nearly died off during the severe winter of 1995/96 and has not recovered since.

Intensive shipping traffic by cargo and fishery vessels may result in disturbance of seabirds and especially the seaduck species eider and common scooter, which depend on the offshore area both as a major roosting and foraging area during winter and again during the sensitive moulting period in late summer.

The increased building of wind farms in the North Sea may affect both seabirds and marine mammals in the North Sea. Wind farms are not allowed in the Nature Conservation Area, but some have already been established close to this area and others are planned, and can, therefore, influence parts of the wildlife populations that use both the offshore area and the tidal area.

The environmental effects of the construction of wind farms in Danish offshore areas have been studied thoroughly during the last decade. The study includes one of the largest wind farms in the world, the Horns Rev 1 Wind Farm, constructed in 2002 (sited 14–20 km west of Blåvands Huk with 80 turbines; 20 km²). Additionally, an extension of the wind farm was completed by 2009 with another 91 turbines; 35 km²).

The main results of the ecological effects of the first phase are:

In relation to fish, data have documented some effects of the cable route on fish behaviour, indicating avoidance of the cable as well as attraction, depending on species. Further investigations were made to see if fish began to colonize the turbine foundations as artificial reefs. The early results were not clear, but the colonization of the foundations will probably progress over the coming years, and may lead to higher diversity and biomass of fish species in the wind farm area.

Hazards presented to birds by the construction include barriers to movement, habitat loss and collision risks. Observations confirmed that most of the more numerous species showed avoidance responses to the wind farm, although responses were highly species specific. Birds tended to avoid the vicinity of the turbines and there was considerable movement along the periphery of the wind farm. Post-construction studies showed almost complete
absence of divers and scoters within the farm. Other species showed no significant change. Although such bird displacement represents effective habitat loss, it is important to assess the loss in terms of the proportion of potential habitat affected relative to the areas which remain available outside the wind farms. However, the cumulative impacts of many other such wind farms may constitute a more significant effect in the future.

To seals, the wind farm area is part of a much larger foraging area. No general change in behaviour at sea or at their nearby roosting sites could be linked to the construction or operation of the wind farm. Only a slight decrease in porpoise abundance was found during the construction and no effect during operation of the wind farm was observed. However, clear effects of pile driving the foundations were observed.

Harbour seals spend part of their time in the offshore zone. Harbour porpoises appear in considerable numbers in the adjacent coastal part of the North Sea, especially in winter, partly in spring. The Schleswig-Holstein offshore area off Sylt is an important rearing area for harbour porpoises. Meanwhile there are indications that the offshore area in other parts of the Wadden Sea could also become important for these small whales.

There is little experience within the trilateral cooperation with the management of the offshore area. The whole of the Danish offshore part of the Wadden Sea Area is part of the national park. In the Danish offshore area, shellfish fishery on species other than mussel, cockle and shrimp, is not allowed. Parts of the German national parks are situated in the offshore area. The commercial extraction of sand is, in principle, not allowed. Cockle fishery is not carried out.

In Denmark, the conservation status of Habitat Type 1110, 1160 and 1170 is unfavourable-bad.

In Germany, the conservation status of Habitat Types 1110, 1160 and 1170 is unknown.

In The Netherlands, the conservation status of the offshore Habitat types 1110 and 1140 is unfavourable-inadequate.

**HOW TO PROCEED**

For the area of the World Heritage property, the state parties of Germany and The Netherlands have confirmed their commitment not to explore and extract oil and gas at locations within the revised boundaries of the nominated property, in line with the law in force.

The offshore area in The Netherlands has been designated as a Natura 2000 area, to a limit of 3 sea miles for the Bird Directive and to the 5 meter depth line for the Habitats Directive. The management plan for this part of the offshore area must be ready by early 2012 at the latest. The Netherlands intends to enhance the designation as Natura 2000 area to the 20 meter depth line and notified this extension to the EC in December 2008.

There is a need to evaluate differences in national policies for the offshore area, including differences in the implementation of relevant EC Directives, with the aim of identifying harmonisation needs and possibilities.

Because of the interactions between hydrological and geomorphological processes in the offshore zone, the dunes and beaches, the tidal area and the salt marshes, policies aiming at increasing the natural dynamic situation in these habitats need to be further developed and intensified. Coastal flood defence and protection needs should not be affected, in particular in the light of increasing sea level rise.

Policies for safeguarding the food situation for birds must be continued for the whole offshore area.

The management of seals in the offshore area is covered by the Trilateral Seal Management Plan (see Chapter 10). This plan is amended and updated at regular intervals.

In view of the high numbers of harbour porpoises in the offshore area, policies aiming at safeguarding these values, especially in rearing areas, will be further developed.
TRILATERAL POLICY AND MANAGEMENT

7.1 Trilateral policies will be based on an integrated approach to coastal flood defence and protection and nature protection on the mainland coast, the islands and the offshore zone.

7.2 In view of accelerating sea level rise, increased attention will be given to the role of the offshore zone in the total Wadden Sea sand balance. In this respect sand will only be extracted from outside the Wadden Sea Area. Exemptions for local coastal flood defence and protection measures may be granted, provided it is the Best Environmental Practice for coastal protection (e.g. taking the sand from below the wave base).

7.3 To concentrate cable crossings through the Wadden Sea within a minimum of cable corridors and a minimum of cables, using the best available techniques, e.g. cables with highest capacity available, and to communicate regularly on this item in order to use synergies. (Identical with 3.17; 4.19; 5.10)

7.4 The construction of wind turbines in the Nature Conservation Area is prohibited. (Identical with 3.18; 4.17; 8.4; 9.11)

7.5 The construction of wind turbines, in the Wadden Sea Area outside the Nature Conservation Area is only allowed if important ecological and landscape values are not negatively affected. (Identical with 3.19; 4.18; 8.5; 9.12)
8 Rural Area

THE HABITAT

The rural area includes meadows and arable land on the islands, Halligen and on the mainland where there is a strong ecological relationship with the Wadden Sea.

Human use, mainly agriculture, has priority in major parts of the rural area. The areas for wildlife and biodiversity have for centuries been determined by agricultural utilization. To migratory birds, in particular some wader, duck and goose species, rural areas behind the dikes on the islands and on the mainland are very important during their stay in the Wadden Sea Area. Meadows, pasture land and arable land are utilized as roosting sites by golden plover, lapwing, ruff and curlew, and other species, mainly in spring and autumn. The herbivores widgeon, barnacle goose and, to a lesser extent, brent goose, also use meadows and arable land as feeding areas during autumn and spring.

Furthermore, some rural areas on the islands and on the mainland are important alternative high-tide roosting sites when there are extraordinarily high water levels in the Wadden Sea.

The rural area is in most cases not a habitat type according to the EC Habitats Directive, but it may contain designated habitat types, e.g. 3150 (natural eutrophic lakes with magnopotamion or hydracharition- type vegetation), 6510 (lowland hay meadows) and habitat types of the wet grassland and the species rich meadow grassland. The low-lying marshes and wetlands are of utmost importance to a number of breeding bird species which are characteristic of the Wadden Sea Area and which are under protection of the EC Birds Directive. Several areas within the Wadden Sea Area, as well as areas adjacent to the Wadden Sea Area, have been designated as Special Protection Areas (SPA) according to the Birds Directive and Special Areas of Conservation (SAC) according to the Habitats Directive. These areas include a number of protected habitat types and species.

THE TARGETS

• Favourable conditions for flora and fauna, especially migrating and breeding birds.
• Good ecological connectivity between the tidal area, salt marshes and rural areas.

STATUS AND ASSESSMENT

Breeding birds

Six species that rely on rural areas behind the seawall (oystercatcher, Northern lapwing, ruff, common snipe, black-tailed godwit, and common redshank) showed significant declines in 1991-2006. Drivers for the negative trends are not known in detail in all species. Some of the nests fail due to predation (mainly mainland), whereas many other suffer from intensified agricultural practice (all areas). Numbers of spoonbill have increased, so have the numbers of them that have been observed feeding in ditches in the rural area.

Migratory birds

Numbers of roosting birds during high tide are mainly linked to developments in the intertidal area, or factors in breeding grounds outside the Wadden Sea Area, mentioned in the chapter Birds. The species that rely on rural areas for feeding are golden plover, brent goose, widgeon, curlew, lapwing and barnacle goose. Among these, barnacle geese have shown a significant increase since 1987 (as part of a general population increase). Brent goose shows an adverse trend (now stable, but decline in the 1990s and probably also in the near future due to lack of good breeding years in Siberia). The other species show
stable trends. The exception is the golden plover, which has shown a decline since 1987. This is one of the main species relying on rural areas behind the seawall.

The herbivores wigeon, barnacle goose and, to a lesser extent, brent goose, use partly meadows and arable land as feeding areas during the period September/October to March/April. A shift in habitat use from natural feeding areas such as seagrass beds and salt marshes to agricultural land (e.g. intensively used grassland areas) has occurred and resulted in damage to agricultural land and, as a consequence, conflicts with farmers.

At night, marshes, grasslands and fields behind the dikes are utilized by wigeons. However, the use of agricultural land by geese and ducks, and in consequence also the conflicts, are concentrated in specific localized areas. This is not only dependent on the management of the concerned area, but also on the management of habitats and geese elsewhere. The developments in agricultural use (e.g. cultivation of winter grain, set-aside or transformation of meadows to farmland) also have consequences for the use by geese and ducks.

Human activities

A major change in the human use of the rural area has been a further intensification of agriculture. This mainly concerns turning pastures into arable land, e.g. for growing maize. This development is enhanced by energy policies that enhance farmers to grow crops that can be used for generating energy from biomass. This change has a major (negative) impact on the biodiversity of the rural area.

In all three Wadden Sea states biodiversity has decreased as a result of the abandonment of the EU set-aside policies in 2008, in order to increase production of crops. Furthermore, earlier mowing of grassland in spring has a negative impact on breeding success of meadow birds.

In the past decades numerous wind farms have been constructed in the vicinity of the Wadden Sea Area, especially in Niedersachsen and Schleswig-Holstein, which may have an impact on roosting and migrating birds.

Locally, agri-environmental schemes have been designed to improve breeding and feeding opportunities for farmland birds, but mainly species that have no direct connection with the Wadden Sea.

National policies

There is a marked difference between the Wadden Sea countries regarding implementation of the EC Bird Directive. In Denmark and partly Schleswig-Holstein rural areas on the mainland, with an ecological link to the Wadden Sea, are included in the Wadden Sea Area. In Niedersachsen SPAs have been designated all along the mainland coast, not being part of the Wadden Sea Area. In The Netherlands there are only few SPAs on the mainland, directly adjacent to the Wadden Sea Area.

HOW TO PROCEED

The most important element in future policy and management is to work towards sustainable agricultural use of the rural area. However, it is evident that this can only be done in close cooperation, and on a voluntary basis, with the agricultural sector.

Regional and local authorities have an important responsibility to stimulate sustainable use in cooperation with the people who live in the area.

Also, measures in the tidal area and salt marshes will help to provide favourable conditions for the concerned bird species.

There are strong interactions between the tidal area, salt marshes and the rural areas, and this connection can be strengthened by the establishment of a sustainable development strategy which integrates policies for both the tidal area, salt marshes and the adjacent areas.
The proper management of geese is an issue of increasing relevance in Wadden Sea Region due to increasing numbers of geese. On the one hand geese "belong", to the area, they are a natural asset and are a typical and to a large extent protected element of the Wadden Sea Region biodiversity. Due to the high proportion of the populations being dependent on the Wadden Sea there is also an international responsibility of the Wadden Sea countries for these species. In addition, geese also constitute an important touristic attraction.

On the other hand, some geese species cause increasing damage to farmlands, while current management schemes for geese are highly variable between countries and liable to further improvement.

It is acknowledged that a coordinated and consistent management of geese grazing in the rural area is needed.

There is a need to make consistent national policies regarding the designation of parts of the rural area as SPA.

TRILATERAL POLICY AND MANAGEMENT

Trilateral measures regarding the management of human activities which are relevant for the rural area, and which have also relevance for the special Targets on birds, such as hunting, are dealt with comprehensively in Chapter 9 on birds.

8.1 Sustainable agriculture for improving nature conservation, with particular emphasis on improving conditions for breeding meadow birds, limiting the use of artificial fertilizers and pesticides and a good water management, maintaining typical landscape elements and protection of cultural heritage will be supported, amongst others, financially.

8.2 Nature areas reclaimed for agricultural purposes should be restored, where possible, through voluntary cooperation with, and active participation of, the owners.

8.3 The management of geese in the rural area will be based upon a strategic trilateral goose management plan.

8.4 The construction of wind turbines in the Nature Conservation Area is prohibited. (Identical with 3.18; 4.17; 7.4; 9.11)

8.5 The construction of wind turbines, in the Wadden Sea Area outside the Nature Conservation Area, is only allowed, if important ecological and landscape values are not negatively affected. (Identical with 3.19; 4.18; 7.5; 9.12)
The Wadden Sea is an important area for breeding and migrating birds. Of 5 species more than 25% of the NW-European population breeds in the Wadden Sea. A total of 14 breeding species is listed as Annex I species of the EC Bird Directive. Several species are included in national Red Lists in the Wadden Sea countries. At least 52 populations of 41 different species occur in high numbers as migrant, moulting or wintering bird in the Wadden Sea. For 44 populations in 34 species, the Wadden Sea is an indispensable roosting area. All these species belong to the so-called East-Atlantic flyway, a system of migration routes between Greenland and Western Siberia in the Arctic and wetlands in Western and Southern Africa. The most important migratory and wintering birds are geese, ducks and waders.

Birds use different habitat types of the Wadden Sea Area. Therefore, all habitats which are used by one species or population are linked to and depend on each other. For example, feeding areas and appropriate roosting sites on the tidal flats or salt marshes should be available in sufficiently close distance to the breeding site of a species. During various periods, all these habitats are important habitat types for the different species and are essential for the natural development of these species in the Wadden Sea Area. Therefore, the bird Targets are more or less relevant for all habitat types in the Wadden Sea Area.

All countries have designated most of their parts of the Wadden Sea Area as SPA and/or SAC and have adopted conservation objectives for the designated species.

The Bird Targets are consistent with the national Natura 2000 conservation objectives. The Targets are also consistent with World Nature Heritage criterion “X”.

The conservation status of birds in the Wadden Sea Area is primarily determined by weather conditions, the availability of habitats and their quality, the availability of adequate breeding or roosting areas, food availability, disturbance from various human activities, and by pollution. For migratory and some breeding birds these factors are relevant for the whole of their flyways.

**Migratory Birds Developments**

Trends for 34 waterbirds are now available for a 20-year period for the entire Wadden Sea and show that 8 species show a strong or moderate increase, 12 species are stable and 14 species show decreasing trends. Among the increasing species are the great cormorant, Eurasian spoonbill and barnacle goose. Some of the stable species are brent goose, Eurasian wigeon, red knot and Eurasian curlew. Among the decreasing species are common...
shelduck, mallard, Eurasian oystercatcher and Kentish plover. The trend for common eider covers only the last 15 years and this is also decreasing.

The reason for changes in numbers for most species is not known and for future assessments more detailed information and data are necessary together with ecological studies.

Breeding Birds Developments

Analyses of trends of Wadden Sea breeding birds in 1991-2006 show that 13 of the 29 monitored species for which a trend calculation was possible are actually in decline. Recent counts suggest that (further) declines are also due in common eider, arctic tern and little tern. Especially in waders, declines are most pronounced: 12 of 13 declining species represent this group and they include both typical Wadden Sea breeding species like oystercatcher, avocet and common redshank and more farmland-dependent species like Northern lapwing and black-tailed godwit. Dunlin, ruff and common snipe have nearly gone extinct and mainly depend on management of their remaining breeding sites in Denmark. Backgrounds of the observed trends are only partly known. At least in some species it has been demonstrated that breeding success has been low for many years. Depleted food stocks have had a negative impact on especially shellfish-eating species (common eider, oystercatcher and herring gull). For Kentish plover and great ringed plover, disturbance and habitat changes are important limitations that prevent a recovery from the long-term declines observed in both species. For breeding meadow species it is evident that intensification of farming practice (drainage, fertilizing, early mowing in grasslands etc.) has had clear negative effects on both breeding success and population developments. In addition an increased predation, often by invasive species, creates problems. The impact of other factors, such as changes in salt marsh management and climate change in the Wadden Sea ecosystem are largely unknown yet.

Breeding Success

In 2009 a new TMAP Parameter was introduced in order to explain downward trends in several breeding bird species. The new parameter 'breeding success' performs as an early-warning system to detect changes in the ecosystem or assess human impact, since it is more directly linked with shifting conditions in the environment. Moreover, evaluation of the target 'natural breeding success', as addressed in the Wadden Sea Plan, was not possible with monitoring of only population size and distribution.

Contaminants in bird eggs

In 2008, the ecological quality objectives (EcoQOs) proposed by ICES and OSPAR for contaminants in seabird eggs have already been reached for some substances at some sites in the Wadden Sea. The stagnation of the levels of various substances and some recent increases point to local problems with environmental pollutants. At the hot spots of contamination, the present concentrations of $\Sigma$PCB and $\Sigma$DDT, especially in the eggs of common tern, are still very high in comparison with the target levels.

Roosting Areas

Waterbirds in the Wadden Sea gather at roosting places during high tide. Many of the important roosting sites can be found at areas with a low level of human activity and are located at close range of intertidal mudflats occur. Human disturbance is nevertheless among the most important factor with influence on bird numbers at high tide roosts, and it can put an extra stress on the species energetic balance and their tight migration schedule.

High tide roosts are relatively well protected, with more than 80% of these roosts being located within Special Protection Areas. Despite this, disturbances can occur in all parts of the Wadden Sea. A main impact is by outdoor recreation, with peaks during July and August but also, increasingly, in spring and autumn. Potential conflicts are minimized and resolved by spatial and temporal zoning of recreational activities as well as convincing
visitor information systems. Different protection schemes for roosting birds are in place along the Wadden Sea.

**Moulting Areas**

Large numbers of moulting common shelduck, common eider and common scoter occur, and several sites within the Wadden Sea Area hold numbers of international importance. During the moult the species are flightless, and therefore very sensitive to disturbance, thus they choose areas with a minimum of human activity, especially by small boats. The three species differs in moult periods, moulting locations and moulting behaviour. Because shelduck and eider concentrate very much during moulting, moulting areas are well known. As result of concomitant research on planned offshore windparks more information is available about the common scoter. Common scoters are highly dispersed at a huge area during their moult. Therefore a protection scheme is difficult to find. The northern Wadden Sea seems to be a very important moulting are for that species. Due to the concentration of almost all moulting Shelducks in just one area there is a permanent risk for this species which requires special attention.

More information is needed about the planning of offshore wind parks and the associated traffic, as well as shrimp fisheries and sand extraction, which can potentially affect the distribution and activity of common scoters at sea during the moulting season.

Generally further assessment of the demand of undisturbed moulting sites in and outside the Wadden Sea is needed.

**Food Availability**

Large populations of herbivorous aquatic bird species, among which the barnacle goose, the dark-bellied brent goose, and the Eurasian wigeon, and semi-herbivorous aquatic bird species, such as the mallard and teal, occur in the Wadden Sea. Of these the barnacle goose shows a steady strong increase, the dark-bellied brent goose and the Eurasian wigeon are stable and the common teal together with mallard are decreasing. For none of the decreasing species food seems to be the cause.

Fertilized grasslands landwards the dikes will always be of higher food quality and could thus become more attractive for geese than the natural saltmarshes. Goose numbers (especially Barnacle goose) have increased further and with them the conflicts between different stakeholders.

Common eider, oystercatcher and herring gull depend on shellfish and both, breeding and roosting populations are decreasing. The common eider and the Eurasian oystercatcher use blue mussel as their main food source. Large scale studies in the Dutch Wadden Sea showed a possible connection between the exploitation of blue mussels and cockles and the size of bird populations. Simultanous declines in blue mussels and local bird populations of some species have been described. While the mussel fishery was hardly regulated in the 1980s and 1990s, since then management measures for mussel fisheries including regulations for food reservation for birds have been introduced in all Wadden Sea countries.

Some bird species are now arriving earlier and staying longer during autumn, than in the past. These major changes in phenology are most likely influenced by milder climate during the last 20 years, and from a management perspective this opens new challenges, meaning that the Wadden Sea shall in the future be able to host birds that no longer use their original autumn and wintering grounds as well as those individuals that normally use to stay in the Wadden Sea during autumn and winter.

There are four military exercise sites in the Wadden Sea Area: in the Dutch Wadden Sea the exercise grounds the “Vliehors” and the “Mokbaai” are located partly within and partly outside the Nature Conservation Area. The “Vliehors” is used on work days for firing guns and rockets and bomb dropping. Explosive bombs are only used outside the breeding season. Practices with bombs, rockets and gunning from fighter planes occur on average 180 days per year. In the “Mokbaai” annually about 50 exercises involving zodiaks, landing crafts and helicopters of the naval forces are executed, confined to work days. In Germany
a ballistic testing site for new weapons is located in the Meldorfer Bucht. The area has been used since the early 1980s. However, over the last ten years the range has been used on average on 0.5 days per year only. Tests are undertaken from platforms on the seawall outside the Nature Conservation Area, however the target area stretches into the Nature Conservation Area. In the Danish Wadden Sea military activities takes place at the northern part of the island of Rømø. Here air-to-ground training sessions are regularly performed, and these actions are quite distinctive, but strongly limited in time.

All military activities are limited in time to take account of especially breeding and moulting times for birds and seals. An impact assessment study in the Meldorfer Bucht conducted in 2001 showed that the overall impact on birds (and seals and macrobenthos) was very small. In combination with the very low frequency of testing activities here, it can hence be stated that the testing site has no negative effects on the biological values and the integrity of the Meldorfer Bucht area. On Rømø the closure of the area for the public has delivered important breeding sites with no or very little disturbance from other human activities compared to other saltmarsh and dune areas in the Wadden Sea. An agreement between the Ministry of Defence and the Ministry of the Environment includes a management plan (2002 – 2017) for the 2.200 ha of important saltmarsh and beach areas within the shooting range.

**EC Bird Directive**

Only 15 bird species (13% of the total number of species) have been listed commonly as designating species in all countries. Hence, there is quite a variation among countries what species they have used. Differences were also found in implementation of the Bird Directive:

- use of numerical threshold values (number of birds) in Denmark;
- use of ecological carrying capacity of the habitat for a certain population size in The Netherlands;
- use of habitat quality as assessment parameter in Niedersachsen and Schleswig-Holstein and The Netherlands;
- no site-based conservation targets in Hamburg and Denmark.

**HOW TO PROCEED**

An important element in future policy and management is to work towards acceptable solutions to reduce the conflict between food requirements for birds and the interests of fisheries and agriculture. It is important to avoid food shortage due to disturbance of other human uses (such as recreational activities, aerial traffic, wind turbines and hunting), as well as, human activities which favor certain species of birds by increasing their food supply, e.g. fishery discards, eutrophication and agricultural practices in island polders and areas behind the dikes. However, it is evident, that this can only be done in close cooperation with the fishery and agricultural sectors.

Policies for transition towards sustainable shellfish fisheries are described under tidal area.

Policies for goose management are presented under Rural Area.

Measures to protect breeding, roosting and feeding habitats can be achieved by establishing a sufficient number of bird reserves of proper size and through the management of human activities. Breeding populations of Kentish Plover and Little Tern, which are highly dependent on sandy beaches and primary dunes, are particularly threatened. The situation of these species will be further improved. The same is valid for migrating and moulting birds. Undisturbed moulting and roosting sites which lie close to their feeding areas are necessary for birds to avoid energy loss.

It is important to avoid the construction of wind turbines in the rural area where this may cause a significant impact on birds.

The impact of civil air traffic has been limited by, amongst others, minimum flight altitudes (Germany, and The Netherlands) and by additional voluntary agreements with
pilots and airport administrations (Schleswig-Holstein and Niedersachsen). No additional measures have been taken in Denmark. Because severe disturbances are still reported, there is a need to continue to further reduce impacts by civil air traffic in close cooperation with the relevant islands.

Flyway-Cooperation Agreements have already been established with The Wash and Guinea Bissau.

The Trilateral Cooperation will further strengthen the cooperation on management and research activities with state parties of the African Eurasian flyways, which also play a significant role in conserving migratory species along these flyways.

Conservation objectives according to the Birds Directive will be made consistent to the extent possible and assessment methodologies harmonised.

TRIANGULAR POLICY AND MANAGEMENT

Bird conservation and management at the general trilateral policy level is subordinated in the Nature Conservation Area to the Guiding Principle, i.e. a natural and, as far as possible, dynamic Wadden Sea ecosystem, even if natural dynamics may lead to less favourable conditions for some bird species or populations locally. That means that in the Nature Conservation Area the Guiding Principle is more important than special conservation measures for certain species. However, severe declines of protected bird species will not be accepted if the reasons are found regionally in the Wadden Sea.

The general management measures for specific habitats, listed under the headlines of the habitat categories, can be relevant for bird populations in general.

Site Protection

9.1 The conditions for breeding birds will be further improved by appropriate management.

9.2 It is the aim to further improve the conditions for migratory birds during roosting and feeding, as well as, for seaducks in the offshore area during moulting, through integrated management.

9.3 Avoid barriers between feeding, roosting and/or moulting areas, e.g. by wind turbines or wind parks.

9.4 Prevent introduction and immigration of mammalian predators to the Wadden Sea islands. Artificial structures allowing predators to reach areas which they could not use under more natural conditions, may not be constructed, or, where possible, removal should be considered.

Food Availability

9.5 Cockle fishery is not allowed in the Wadden Sea Area, with the exception of mechanical fisheries in some small areas along the Esbjerg shipping lane and in the Ho Bay, and in Niedersachsen outside of the conservation area (but will not be carried out at present), as well as non-mechanical cockle fishing in The Netherlands. (Identical with 4.22)

9.6 The effects of mussel fishery are limited by the permanent closure of considerable areas and the optional reservation of sufficient amounts of mussels for birds. In addition, the management of fishery on mussels should not be in conflict with, protecting and enhancing the growth of natural mussel beds and Zostera fields. (Identical with 4.23)

9.7 Mussel fishery will, in principle, be limited to designated parts of the subtidal area. Based on national management plans, fishery on the tidal flats may be granted. The fishery sector will, in close cooperation with competent authorities, improve existing practices in such a way that impacts of mussel fishery, in general and seed mussel fishery, in particular will be minimised. (Identical with 4.24)
Acoustic and Visual Disturbance

Recreational and farming activities

9.8 Disturbance in significant breeding, moulting and roosting areas will be further reduced and access to these areas will be made more predictable for birds, through clear temporal and spatial zoning (for example using only certain footpaths on salt marshes, beaches and dunes and information system for visitors). Regulations should be established in close cooperation with the involved stakeholders.

9.9 It is the aim to further reduce the disturbance in significant breeding areas caused by grazing through the reduction of the grazing pressure and through postponing the beginning of the grazing period, except where a certain intensity of grazing is necessary for coastal flood defence and protection measures.

9.10 Driving cars in breeding areas on beaches and in dunes is prohibited. (Identical with 5.7)

Wind energy

9.11 The construction of wind turbines in the Nature Conservation Area is prohibited. (Identical with 3.18; 4.17; 7.4; 8.4)

9.12 The construction of wind turbines in the Wadden Sea Area outside the Nature Conservation Area is only allowed if important ecological and landscape values are not negatively affected. (Identical with 3.19; 4.18; 7.5; 8.5)

Hunting

9.13 Hunting of migratory species is prohibited, or will be progressively phased out in the Nature Conservation Area or in an ecologically and quantitatively corresponding area in the Wadden Sea Area.

9.14 Hunting of non-migratory species is prohibited, or will only be allowed in the Nature Conservation Area if migratory species are not harmed.

Civil air traffic

9.15 The impact of civil air traffic in the Wadden Sea Area will be further limited.

9.16 New civil airports will not be constructed in the Wadden Sea Area.

9.17 The expansion of existing civil airports in the Wadden Sea Area is restricted to cases where this is essential in order to increase the safety of air traffic.

9.18 Minimum flight altitudes for civil air traffic have been or will be established in the Wadden Sea Area. Exemptions can be granted for safety reasons and for scientific purposes and will be confined to designated flight corridors situated in less vulnerable parts of the Wadden Sea Area.

9.19 Advertisement flights are, in principle, prohibited in the Wadden Sea Area.

9.20 Helicopter flight routes and altitudes are established in such a way that the disturbance to wildlife in the Wadden Sea Area is minimised.

9.21 The recreational values of the Wadden Sea will be maintained for the benefit of man and nature. To this end in the Nature Conservation Area,
- in the ecologically most sensitive areas, zones have been or will be established where no recreational activities, including excursion ships and recreational boating, is allowed;
- the use of jet skis, water skis and similar motorized equipment has been, or will be, prohibited, or limited, to small designated areas;
- new marinas will be avoided and the extension of the existing marina capacity will only be allowed within the approved levels;
- water sports like wind surfing have to be balanced with the needs of nature protection and bathing tourism;
- kitesurfing can distort nature values, in particular roosting sites for birds. The aim is a harmonised approach to kitesurfing, consisting of zoning where the activity is allowed under conditions. (identical with 4.28 and 10.5)

9.22 Speed limits for ships have been imposed, taking into account safety, environmental, recreational and fishery factors. (Identical with 4.29 and 10.6)

Military activities

9.23 Disturbance caused by military activities has been, or will be, reduced and the possibilities for further concentrating and/or phasing out military activities will be regularly examined.

9.24 The negative effects of low altitude flight routes of military aircraft have been, or will be, reduced by reducing the number of flights and the maximum speed.

9.25 Action to minimize disturbance caused by military air traffic in the Wadden Sea Area will be taken on a coordinated basis.

9.26 High priority will be given to the assignment of redundant shooting ranges as nature protection areas.
THE SPECIES

The harbour (or common) seal, the grey seal and the harbour porpoise may be regarded as indigenous Wadden Sea species. Water is the main or exclusive element of these marine mammal species. The year round, the seals use other habitats than water, to haul out ashore. This includes sand banks in the tidal area and beaches or even any coastal shore. Grey seals tend to prefer areas that are available for longer periods, and could also haul out on higher grounds such as dunes. This holds especially when rearing pups, as grey seal pups do not usually swim for the first weeks of their lives. All these habitats are essential for the maintenance of the seals’ vital biological functions, such as whelping, nursing, breeding, moulting, resting and feeding.

Marine mammals, as top predators and often long-lived species, have an important indicative function for the quality of the Wadden Sea ecosystem. These species, and other top predators (i.e. several bird species) that overlap in habitat demand, need special attention. Because of their longevity and dependence both directly and indirectly on large areas, they can be vulnerable to disturbance and pollution. On top of this they are often considered in competition with man for food resources.

The harbour seal, the grey seal and the harbour porpoise are an Annex II species under the Habitats Directive, and special areas have been designated for their conservation. Furthermore harbour seal and grey seal are listed in Annex V, where the conservation objective is that taking in the wild and exploitation may be subject to management measures. National Conservation Objectives have been defined for all three species. In addition, the harbour seal is protected through the Trilateral Seal Agreement under the Bonn Convention on the Conservation of Migratory Species of Wild Animals (UNEP/CMS) from 1990. The harbour porpoise is protected according to the Agreement on the Conservation of Small Cetaceans of the Baltic and the North Seas (ASCOBANS; UNEP/CMS, 1990).

THE TARGETS

- Viable stocks and a natural reproduction capacity of the harbour seal, including juvenile survival.
- Viable stocks and a natural reproduction capacity of the grey seal, including juvenile survival.
- Viable stocks and a natural reproduction capacity of the harbour porpoise
- Conservation of habitat quality for conservation of species.

The Targets are consistent with the national Conservation Objectives under the Habitats Directive. The Targets are also consistent with World Natural Heritage criterion “X”.

STATUS AND ASSESSMENT

Harbour Seal

In the years after the virus epidemics in 1988 and 2002, the population of the harbour seal has shown a rapid recovery. During coordinated flights in the entire Wadden Sea Area in 2009, 21,500 seals were counted, the highest number ever counted in the international Wadden Sea during the moult.
Grey Seal

Grey seals have relative recently recolonised the Wadden Sea. Currently the species is regularly seen in all countries, including in the Danish Wadden Sea area which seems to be the last area colonised. Since 2004, there have been coordinated counts of grey seals in NL and D. Breeding, occurring in December-January, is observed in several locations throughout the Wadden Sea. By far the largest colony is observed in the western Dutch Wadden Sea between the island of Vlieland and Terschelling. Two other breeding sites have developed in the area including Amrum and Helgoland. More scattered over the Wadden Sea, single births and small groups have been recorded, sometimes breeding, indicating that the grey seal population in the Wadden Sea might still be expanding. The maximum number of grey seals counted during the moult 2009 in the Wadden Sea and at Helgoland, was 2756 animals.

Harbour Porpoise

Estimates in 2005 of harbour porpoise numbers for the total North Sea area amount to 335,000 animals. Parts of the population seem to have shifted from the northern North Sea southwards. As porpoise migrate into coastal waters and close to the Wadden Sea, numbers recorded have strikingly augmented in the early 2000s. German studies show hot spots of abundance and frequency (Sylter Außenriff, Borkum Riffgrund and the area north of Helgoland). Waters around the Knobsände off Amrum and west of the island of Sylt show a relatively high density of mother calf-groups (the suckling-period of this species lasts approx. 8 months) in this area. It can be concluded that this area is an important rearing area for harbour porpoises.

ASSESSMENT

The present and short term conservation status of harbour seals, grey seals and harbour porpoises in the Wadden Sea Area is determined by several environmental factors, including disturbance as a result of various human activities (such as recreation activities, construction activities for off-shore wind parks, fisheries, air traffic, shipping and some military activities) and food availability. At present, the harbour seal population does not show any indication of density dependence.

Pollution is presently not a major issue for marine mammals in this area. The current population levels of the seal species do not seem to be affected. Attention to possible new sources of pollutants should remain however.

Though probably still not at the population level of around 1900, the harbour seal population has recovered well from the very low numbers observed in the mid-1970s after hunting was forbidden, and after the 1988 and 2002 epidemics. The total population size indicates that the present harbour seal population can be regarded as viable. Comparison with other harbour seal populations elsewhere leads to the conclusion that the reproduction capacity of the Wadden Sea harbour seal population is at a satisfying level. Still, juvenile mortality is relatively high (approx. 35% instead of 20–25%), despite good protection of the main resting and nursing places. Other factors such as disturbance are in some cases still not satisfactory.

For both the grey seal and the harbour porpoise, data are lacking to enable an assessment of whether the current stocks dependent on the Wadden Sea area are viable, or to enable an adequate estimate of the natural reproduction capacity. In both cases the current stocks show strong interdependencies with stocks subsisting elsewhere in the North Sea.

HOW TO PROCEED

The quality of the habitat of harbour and grey seals, as well as harbour porpoises, needs at least to be maintained. This is the case both within the Wadden Sea area and in the adjacent North Sea, especially as extensive plans exist to further exploit the areas for a
a variety of industry, including sand mining and wind farming in the near future. Policies for harbour and grey seals have to be further developed in accordance with the actual Seal Management Plan 2007-2010.

For harbour porpoises, more ambitious policies for protected areas may be considered. However, with such a highly migratory species it will be difficult to identify adequate sites and design a flexible management regime.

**TRILATERAL POLICY AND MANAGEMENT**

**Harbour and Grey Seal**

The ‘Agreement on the Conservation of Seals in the Wadden Sea’ (Seal Agreement) was enacted on October 1, 1991 as the first agreement as defined in Article 4, of the Convention on the Conservation of Migratory Species of Wild Animals (The Bonn Convention). The agreement was concluded between the Wadden Sea states with the aim to cooperate closely in achieving and maintaining a favourable conservation status for the harbour seal population of the Wadden Sea Area. The Seal Agreement contains provisions, amongst others, on research and monitoring, on taking and on the protection of habitats, which have been specified in the ‘Conservation and Management Plan for the Wadden Sea Seal Population 1991 - 95’ (Seal Management Plan) and the revised Seal Management Plan 2007-2010. The latter also includes additional measures for the protection of the grey seal.

Regarding the implementation of the Targets for the harbour and the grey seal, reference is made to the specific measures related to the different habitat types and, especially, to the Seal Management Plan 2007-2010.

Measures for the implementation of the Targets on seals are especially listed under “Required efforts and objectives” and Actions in the Seal Management Plan 2007-2010, which are divided into actions on the trilateral and national level. These actions include measures which should be implemented in different habitats and for different purposes, such as research, monitoring and protection of habitats.

The Seal Management Plan will be updated covering the period 2011-2014.

**Harbour Porpoise**

The Agreement on the Conservation of Small Cetaceans of the Baltic and the North Seas (ASCOBANS) was also concluded under the auspices of the UNEP Convention on Migratory Species (the Bonn Convention) in September 1990 and came into force in March 1994. The ASCOBANS Conservation and Management Plan requires the parties to implement a variety of different measures including reducing by-catch, marine pollution and disturbance, conducting surveys and research on species ecology and abundance, adopting protective national laws and raising public awareness. A Conservation Plan for harbour porpoises in the North Sea is under development.

10.1 The trilateral policy for harbour porpoise is to ensure to the greatest possible extent low disturbance levels, to limit underwater noise to an extent that it does not cause damage for harbour porpoises, to minimize the collision risks with ships and to use fishing techniques which are not a threat to whale species.

10.2 It is the aim to protect important breeding/rearing areas of the harbour porpoise in the Wadden Sea Area and adjacent areas through appropriate measures.

10.3 The public will be informed about small cetaceans in the Wadden Sea Area and the North Sea on a common basis in cooperation with ASCOBANS.

10.4 To develop a joint monitoring strategy on harbour porpoise in cooperation with North Sea wide monitoring schemes.

10.5 The recreational values of the Wadden Sea will be maintained for the benefit of man and nature. To this end in the Nature Conservation Area,

- in the ecologically most sensitive areas, zones have been or will be established where no recreational activities, including excursion ships and recreational
boating, is allowed;
- the use of jet skis, water skis and similar motorized equipment has been, or will be, prohibited, or limited, to small designated areas;
- new marinas will be avoided and the extension of the existing marina capacity will only be allowed within the approved levels;
- water sports like wind surfing have to be balanced with the needs of nature protection and bathing tourism;
- kitesurfing can distort nature values, in particular roosting sites for birds. The aim is a harmonised approach to kitesurfing, consisting of zoning where the activity is allowed under conditions. (Identical with 4.28 and 9.21)

10.6 Speed limits for ships have been imposed, taking into account safety, environmental recreational and fishery factors. (Identical with 4.29 and 9.22).
11 Fish

THE SPECIES

The shallow coastal waters of the Wadden Sea and its tributary estuaries and rivers provide indispensable ecological functions to life of fish. They support functions such as reproduction, breeding and feeding and they serve as an acclimatisation area and transit route for long-distance migrants from sea to their spawning grounds located in fresh water. The estuaries, with their pronounced salinity gradient due to the mixing of riverine and marine waters, constitute a very specialised habitat within the Wadden Sea. This is reflected by the special fish fauna composition. The Wadden Sea ecosystem is also connected with and influenced by the North Sea: marine juvenile and marine seasonal species form an important constituent of the Wadden Sea fish fauna.

The tidal area, with its flats, seagrass meadows and gullies, is not only the habitat for fish species living permanently in the Wadden Sea but is also an indispensable spawning and nursery ground for those species which migrate in a latter stage of life to the North Sea and Atlantic Ocean. Many of them are of commercial importance.

The Wadden Sea fish fauna consists of approximately 150 species, including 13 freshwater species, of which about half are common or fairly common. The other half must be considered rare or even extremely rare in the Wadden Sea.

THE TARGETS

• Viable stocks of populations and a natural reproduction of typical Wadden Sea fish species.
• Occurrence and abundance of fish species according to the natural dynamics in (abiotic conditions.
• Favourable living conditions for endangered fish species.
• Maintenance of the diversity of natural habitats to provide substratum for spawning and nursery functions for juvenile fish.
• Maintaining and restoring the possibilities for the passage of migrating fish between the Wadden Sea and inland waters.

The Water Framework Directive recognizes fish as a biological quality element for transitional waters (estuaries) and selected fish species are listed in the Habitats Directive. Among those are the twaite shad, river lamprey, sea lamprey and houting. In addition, characteristic fish species may be used to assess the status of the relevant habitat types described in the HD (e.g. 1110 submerged sandbanks, 1130 estuaries, 1140 sand- and mud-flats). Furthermore, some fish species listed under the Habitats Directives for the Wadden Sea Natura 2000 network serve as main food item for birds or marine mammals.

In the Marine Strategy Framework Directive, one of the descriptors of the good environmental status deals with commercially exploited fish and shellfish.

STATUS AND ASSESSMENT

The Wadden Sea estuaries and rivers are subject to substantial anthropogenic pressures, which are reflected in the aquatic biotic communities and in the fish fauna in particular. Among the most relevant anthropogenic factors influencing the habitat conditions in river systems are dams, sluices, weirs and riverbed maintenance. In the estuaries, dredging and the disposal of dredged material, coastal flood protection and flood defence and the direct or diffuse input of substances from industry and agriculture are main factors. The North Sea is subject to increasing human demands for shipping, exploitation of resources...
(gas and oil, sand and gravel) and wind energy, and to a lesser extent for coastal fishery. Intermingled with the anthropogenic pressures that are exerted, natural variability plays a very important role. Recently, an increasing number of publications point to the relationship between the North Atlantic Oscillation, or regime shifts in the North Sea, and fish populations, or to the effects of increasing water temperatures on fish.

The diadromous fish currently seem to suffer most from bottlenecks in the upstream parts of (some) estuaries where water quality and essential habitats are failing. This has resulted in some species going missing and low abundance of the remaining species. Unhindered migration for near-extinct species like houting and salmon, plus good water quality, suitable spawning habitats and favourable conditions for larval recruitment are essential to maintain vital populations of all diadromous fish in the estuaries and river systems in the Wadden Sea. Pumps and sluices are a barrier to diadromous fish migration. Autonomous developments (sea level rise, climate change) leading to more pumps and sluices, tend to increase the pressure on diadromous fish.

The houting belongs to the most endangered fish populations of the Wadden Sea/North Sea and is one of two prioritized species under the EC Habitats Directive. Previously, it was common in the Wadden Sea Area and adjacent river systems. Today it is found in the Danish part of the Wadden Sea Area and in upstream river systems in self sustaining populations. The actual conservation status is unfavourable in Denmark. In Schleswig-Holstein, single individuals are found, but there is no reproducing population.

In order to save the houting from complete extinction in the Wadden Sea, a Danish management plan was published in 2003, and as a follow up a large-scale EU LIFE Houting Rescue Project was set up. The project is primarily focused on creating access to usable spawning grounds for the adults, and creating new nursery areas for juveniles.

The observed distribution shifts of juvenile flatfish indicate changed conditions in the Wadden Sea nursery, which may have become less favourable due to higher water temperatures during summer. At the same time the North Sea coastal and offshore area may now offer increased chances of survival due to decreased predation risk and competition since commercial fish stocks are at low levels. Here, a combination of high fishing pressure on the North Sea and regime-shifts in the North Sea and Wadden Sea ecosystems plays a role.

The estuarine resident species are the least known and understood group, although of all fish species they may reflect the status and quality of the Wadden Sea ecosystem to the largest extent.

The TMAP common package does not include fish monitoring, and the above information is derived from fish monitoring for other purposes (fish stock assessment for ICES or EU obligations).

Following the requirements of the EC Water Framework Directive, new fish monitoring was initiated in 2006 in all transitional waters of the estuaries of the Ems, Weser, Elbe and Eider, to collect data on particularly pelagic and diadromous fish species in these water bodies. The status of fish in estuaries can thus be assessed by using the estuarine fish index that was developed for the Water Framework Directive transitional waters. The status of fish in nearly all WFD transitional waters shows moderate to large deviations from the ‘undisturbed’ condition for natural estuaries. Although the species composition still resembles the assumed reference conditions, except for the too low number of diadromous species, the abundance of typical indicator species is currently at a very low level compared to the early 20th century.

In contrast to the assessment of the fish fauna in estuaries in accordance with the WFD, there is no existing fish index or tool to assess the status of fish fauna the entire Wadden Sea. Some fish species are not adequately covered in the current monitoring programs. The number of fish species and the species composition in terms of ecological guilds seem to have remained fairly stable over the last decades. The abundance of several fish species has decreased to levels below the long-term average, but factors causing these changes are still largely unknown. Also the role of saltmarshes for young fish is not known yet.
HOW TO PROCEED

In general, the following conditions are necessary to reach the Fish Targets:

- Diversity of habitats (subtidal areas and tidal flats, including areas with seagrass and mussel beds), to provide shelter and food for juvenile fish (nursery function and sub-stratum for spawning for estuarine resident species and marine seasonal species).
- Suitable physical, chemical and morphological conditions with the underlying dynamic processes typical for tidal areas (for resident species and marine seasonal species).

In addition, the existing Targets on tidal area (subtidal and intertidal) and salt marshes are regarded as beneficial.

**Estuaries and River Systems**

Conservation and restoration of estuarine habitats are priority issues. Improving water quality (including sufficient oxygen and reduced suspended matter concentrations) and increasing the connectivity between waters will benefit diadromous fish populations, including the species that are protected by the EC Habitats Directive. Fish friendly management of sluices, avoidance of pumps or mitigation of these by creating fish passages and other techniques, and a more natural discharge of fresh water are needed.

**Juvenile Fish**

The abundance of juvenile fish in the Wadden Sea has decreased, partly as a result of a distribution shift to the coastal zone which leads to juvenile flatfish in particular making less use of the Wadden Sea nursery. Reducing the fishing pressure on the North Sea commercial stocks leads to a more natural recruitment in the Wadden Sea.

Juvenile fish and some estuarine resident fish species are susceptible to bycatch in the shrimp fishery. Measures to increase the sustainability of this type of fishery – by reducing discards and bottom disturbance – will benefit Wadden Sea fish populations.

Because of their limited swimming capacities, marine juvenile fish are susceptible to being trapped in the cooling water of power stations and other industries. Large scale extraction of cooling water from the Wadden Sea or estuaries should be mitigated by applying the best available technology to reduce marine organism deaths caused by this entrainment.

**Research and Monitoring**

For a better understanding of the observed changes in the fish community, working hypotheses and subsequent analyses need to be formulated. The functional relationship between fish species and typical habitats should be investigated to better understand the functioning and importance of those habitats for fish. Fundamental research on natural processes and anthropogenic impact affecting fish populations is needed to increase our knowledge of the ecology of Wadden Sea fish and to understand the observed changes in the fish community.

We should continue monitoring the occurring changes in the (Wadden Sea) fish fauna to advance our understanding. There are gaps concerning the monitoring of pelagic fish and the monitoring of the seasonal occurrence of species. The assessment of fish in estuaries will be advanced by the development of an assessment tool and continued (fish) monitoring, to meet the requirements of the WFD. For Wadden Sea fish, a first step toward a common assessment and the selection of suitable underlying metrics was made for the QSR 2009, but further effort is needed to develop an applicable analysis tool. In addition, the role of salt marsh gullies as habitat for fish should be better elucidated.

**TRILATERAL POLICY AND MANAGEMENT**

11.1 Promote conditions for unhindered migration between the sea and upstream and/or inland waters and improvement of the physical conditions in river systems for diadromous fish.
11.2 The living conditions and the total area of habitats for Directive species will be maintained.

11.3 In order to further reduce bycatch and to reduce impacts on the sea floor, the tri-lateral policy principles for a sustainable shrimp fishery will be developed in close cooperation with the fisheries sector. (Identical with 4.27)
III. Implementation
1 Monitoring and Assessment

1.1. OBJECTIVE OF THE TMAP

The Trilateral Monitoring and Assessment Program (TMAP) is the common monitoring program for the Wadden Sea carried out by The Netherlands, Germany and Denmark in the framework of the Trilateral Wadden Sea Cooperation.

The general aim of the trilateral Wadden Sea monitoring, assessment and research is basically twofold, namely

- to provide a scientific assessment of the status of the ecosystem; and
- to assess the status of implementation of the Targets of the Wadden Sea Plan.

Both categories of information are essential for the development and evaluation of the trilateral Wadden Sea conservation policies and management in line with the relevant EC directives, the inscription on the World Heritage list and other international obligations.

1.2. STATUS OF THE TMAP

1.2.1. Parameters

An overview of the TMAP parameters is in Table 3. It underlines that most of the TMAP parameters are part of existing or planned monitoring programs in the three countries and already cover the requirements of the EC Directives and other international agreements.

TMAP parameters are coordinated trilaterally and a number of parameters have been harmonised (breeding and migratory birds, harbour seals, blue mussels, salt marshes, contaminants in bird eggs). They have proven their value for the Target assessment (QSR 2004, 2009) and for national and international reporting obligations (such as Ramsar, OSPAR, EC Directives).

A detailed description of TMAP parameters is in the TMAP Handbook, which is accessible at the CWSS website (www.waddensea-secretariat.org).

1.2.2. TMAP Data Management

An elementary component of the TMAP is common data handling, which makes monitoring data available for trilateral assessment. For this purpose, identical TMAP Data Units have been installed in each country where the data can be stored in the same way.

The TMAP data handling system aims to exchange monitoring data in a common format so that it can be used directly in the trilateral assessment work on the following tasks:

- preparation of Quality Status Reports entailing most recent data and developments,
- preparation of trilateral reports on specific topics (thematic reports, like breeding birds, migratory birds, seals, contaminants),
- preparation of reports on unforeseeable events (e.g. eider mass mortality),
- safeguarding long-term storage of relevant Wadden Sea data,
- use of trilateral data for national and international programs.

The TMAP data handling system supports reporting obligations (e.g. national status reports, EU reports concerning Natura 2000 and the Water Framework Directive, World Heritage, international reports concerning OSPAR, RAMSAR or other international conventions) by providing up-to-date and harmonised Wadden Sea data (including GIS) from different sources on the national and international level.

1.2.3 Assessment Reports

Assessment reports on the Wadden Sea ecosystem (Quality Status Reports, QSR) are prepared at regular intervals related to the Trilateral Governmental Conferences. The reports
describe and evaluate the current ecological status of the Wadden Sea,
identify changes in this status and their possible causes,
identify issues of concern and indicate possible measures of redress, including evaluation of the likely effectiveness of these measures,
identify gaps in knowledge.

Assessments are carried out together with experts and relevant national institutions in charge of the national assessment. Additionally, thematic reports are prepared which entail the results of running trilateral monitoring programs, e.g. monitoring of migratory and breeding birds. The reports on selected subjects are prepared by trilateral expert groups.

1.2.4. Ecological Research

The research component is the flexible element of the TMAP. Ecosystem research studies the environment on a broader perspective, and weighs the more detailed species and habitat research work to gain an overall picture of the condition of the ecosystem. The foremost tasks of ecosystem research are to discriminate between natural fluctuations and human impacts to find the causes of changes observed in the ecosystem. A further task is to continuously improve the efficiency of the monitoring program. These tasks are essential for two goals of policy and management: the capability of providing evidence for man-made causes, and the capability of interpreting and predicting the reactions of the ecosystem correctly.

Because research into the cause of observed changes is a prominent task for concomitant investigations of the ecosystem, new or alternative parameters and monitoring methods must be developed in order to adapt to new developments and to increase the efficiency of the program.

So far, only a few trilateral research projects have been carried out, such as the joint seal project (1990-1994), the first pilot project on breeding success (1996-1997) and the assessment of contrasting trends in migratory birds (2009).

1.3. HOW TO PROCEED

1.3.1 Harmonization

A major challenge for the Trilateral Cooperation is fine tuning the alignment between the national monitoring programs, the requirements of the Trilateral Cooperation and the EC Directives and other international developments. This demands a consistency in parameter selection and monitoring methods, as well as assessment procedures and reporting conditions (see Table 3).

The national assessment schemes of the HD (definition of conservation objectives and favourable conservation status) and WFD (reference condition and a classification scheme for good ecological status) have to be linked with the Wadden Sea Plan (§6 SchD, 2005) in order to develop a harmonised assessment scheme for all parameter groups of the TMAP.

Trilaterally harmonised assessment methods, including quantitative values, should be defined, especially for issues which have to be addressed at a broader scale, such as eutrophication, climate change, alien species, and species and habitats.

On the basis of the Wadden Sea Plan, an overall strategy will be developed on how to harmonize the assessments at national, trilateral and EU level. Thematic experts’ workshops will continue to discuss, and if necessary harmonize, assessment criteria and develop quantitative values for Wadden Sea Area.

1.3.2 TMAP Data Handling and Information System

The TMAP data handling is an effective tool and has contributed positively to the QSR work. There is great potential to use the TMAP data for other value-added national and international purposes.
However, there are still some bottlenecks in the data flow from the monitoring institutes to the TMAP data units and the responsible authorities on national and state level need to open these up.

Further investment has to be realized to improve data access for a broader public. An effective TMAP information system should be able to hold complex data like a data warehouse, to be selectively called up and analysed using standard assessment procedures running through Internet browsers. The prototype of such an information system has been set up on basis of the content of the four data units and trilateral GIS data sets from the secretariat. It was presented at the Scientific Symposium in Wilhelmshaven in March 2009 by applying the visualization software ‘disy Cadenza’. The system should be further developed by the TDG in the three countries with the aim of establishing an "online-QSR" for trilateral assessments.

### 1.3.3 Parameters

For some parameter groups, new monitoring strategies have to be developed. This concerns especially monitoring of subtidal habitats and monitoring in the offshore area (up to 12 sm).

Further technical adaptations of TMAP parameters (such as locations, frequencies, methods) have also to be considered, as have their alignment with the HD, WFD and, where appropriate, MSFD assessment schemes which are under development. The main parameters in need concern macrozoobenthos, macrophytes, eutrophication fish and chemical substances. Specifically, the following is needed:

- Development of a trilateral strategy of subtidal monitoring taking into account the existing operational and planned monitoring activities. This has to be tuned with the HD, WFD, and MSFD related activities, especially with regard to assessment and reporting requirements.
- Implementation of a trilateral monitoring strategy for seabird species, in order to harmonize the existing offshore surveys and make the results comparable in a trilateral assessment.
- Investigation into the need for a joint monitoring of harbour porpoise in the framework of the Habitat Directive and, depending on the outcome, integration of such a parameter on the basis of the German monitoring of that species.

### 1.3.4 Ecological Research

A more comprehensive trilateral research agenda may facilitate ecological research in the Wadden Sea countries, gain synergies and offer an opportunity to apply for funding by EU programs. A Trilateral Research Agenda must be developed in close cooperation with national research institutes and other organizations (such as the Wadden Academy). This can be used to try to secure additional EU funding of trilateral projects (e.g. within the framework of LIFE+).
Table 3: Parameters of the TMAP

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>PARAMETER</th>
<th>METHOD</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. TARGETS ON QUALITY OF WATER AND SEDIMENT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Eutrophication</td>
<td>nutrient inputs (river, atmosph.), nutrients in water, chlorophyll a, phytoplankton, macroalgae, macrozoobenthos</td>
<td>Using OSPAR Common Procedure (see QSR 2004), and WFD guidance</td>
<td>The TMAP parameters cover the existing or planned WFD monitoring programs in the three countries.</td>
</tr>
<tr>
<td>1.2 Natural micro-pollutants (metals, PAH)</td>
<td>metals in sediment and biota (mussel, flounder, bird eggs), PAH (water, sediment, mussel), Beached (oiled) birds</td>
<td>Using JAMP guidelines and WFD guidance.</td>
<td>WFD priority substances to be monitored in the water column using risk analysis for individual water bodies.</td>
</tr>
<tr>
<td>1.3 Man-made substances (xenobiotics)</td>
<td>organochlorines in sediment and biota (mussel, flounder, bird eggs), TBT (sediment, biota)</td>
<td>Using JAMP guidelines and WFD guidance</td>
<td>WFD priority substances to be monitored in the water column using risk analysis for individual water bodies.</td>
</tr>
<tr>
<td><strong>2. TARGETS ON SALT MARSHES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1 Geomorphology</td>
<td>area, vegetation, selected typical species, grazing, drainage</td>
<td>Vegetation mapping (aerial photographs and ground truth); field surveys (permanent plots or stratified random sampling)</td>
<td>Existing monitoring schemes to be continued. Common TMAP typology can be applied.</td>
</tr>
<tr>
<td><strong>3. TARGETS ON TIDAL AREA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1 Macrozoobenthos</td>
<td>area of tidal flats, species composition, abundance, biomass, age (not mandatory)</td>
<td>Field surveys and transects, national WFD guidelines.</td>
<td></td>
</tr>
<tr>
<td>3.3.3 Sabellaria reefs</td>
<td>area and distribution</td>
<td>Mapping of intertidal blue mussel beds (aerial photographs and field surveys)</td>
<td>Revised TMAP guidelines prepared by seagrass group in 2006. From research projects on subtidal mapping in Niedersachsen, Schleswig-Holstein and The Netherlands.</td>
</tr>
<tr>
<td><strong>3.4. Fish</strong></td>
<td>area and distribution in Wadden Sea</td>
<td>Existing surveys for demersal fish (IMARES, vTI-SF) and pelagic fish (LKN)</td>
<td>Wadden Sea fish assessment tool in preparation (similar to WFD tool in transitional waters). Guidelines developed for WFD monitoring (obligatory).</td>
</tr>
<tr>
<td></td>
<td>distribution and abundance of species in transitional waters</td>
<td>Stow net fishery (pelagic fish), 3–4 stations in Ems, Weser, Elbe, Eider</td>
<td></td>
</tr>
<tr>
<td>TOPIC</td>
<td>Parameter</td>
<td>METHOD</td>
<td>REMARKS</td>
</tr>
<tr>
<td>-------</td>
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</tr>
<tr>
<td>4. TARGETS ON BEACHES AND DUNES</td>
<td>- area &lt;br&gt; - vegetation &lt;br&gt; - selected typical species &lt;br&gt; - nitrogen deposition &lt;br&gt; - land use</td>
<td>Vegetation mapping (aerial photographs and ground truth); Field surveys (permanent plots or stratified random sampling)</td>
<td>Existing monitoring schemes to be continued. Common TMAP typology can be applied. Comparability of field survey methods to be enhanced.</td>
</tr>
<tr>
<td>5. TARGETS ON OFFSHORE ZONE (from baseline to 3 resp. 12 sm)</td>
<td>- selected chemicals, area and location of sand banks and reefs, selected typical species (birds) - marine mammals</td>
<td>Using OSPAR guidelines and WFD standards. Methods for subtidal habitats under development in HD. Methods for BD and HD species under development</td>
<td>Research projects on subtidal mapping area carried out in NL and D.</td>
</tr>
<tr>
<td>6. TARGETS ON BIRDS</td>
<td>- number and distribution of breeding birds</td>
<td>Using JMBB/TMAP guidelines</td>
<td>Existing monitoring schemes to be continued. Adaptation to 6-year reporting cycle.</td>
</tr>
<tr>
<td></td>
<td>- breeding success</td>
<td>JMBB/TMAP Pilot project</td>
<td>Pilot project on “breeding success” started in spring 2009</td>
</tr>
<tr>
<td></td>
<td>- number and distribution of migratory birds</td>
<td>Using JMBB/TMAP guidelines</td>
<td>Existing monitoring schemes to be continued. Adapted to 6-year reporting cycle. Projects to be initiated to assess Targets (food availability, roosting and moulting areas, natural flight distances.)</td>
</tr>
<tr>
<td>7. TARGETS ON MARINE MAMMALS</td>
<td>- numbers and distribution of harbour seals (adults &amp; pups)</td>
<td>Using TSEG / TMAP guidelines</td>
<td>Existing monitoring scheme to be continued.</td>
</tr>
<tr>
<td></td>
<td>- numbers and distribution of grey seals</td>
<td>National surveys</td>
<td>Harmonization of existing monitoring (ongoing by TSEG)</td>
</tr>
<tr>
<td></td>
<td>- numbers and distribution harbour porpoise</td>
<td>National and/or North Sea wide surveys according to national HD obligations</td>
<td>Monitoring strategy to be developed in cooperation with North Sea wide monitoring schemes.</td>
</tr>
<tr>
<td>8. HUMAN ACTIVITIES</td>
<td>- fishery &lt;br&gt; - recreational activities</td>
<td>Using TMAP guidelines.</td>
<td>Available data on all other human activities relevant for assessment should also be compiled.</td>
</tr>
<tr>
<td>9. GENERAL PARAMETERS</td>
<td>- coastal protection measures &lt;br&gt; - flooding/hydrology &lt;br&gt; - land use &lt;br&gt; - weather conditions</td>
<td>All relevant available data from existing sources</td>
<td>Compilation in connection with trilateral assessment (QSR)</td>
</tr>
</tbody>
</table>
2 Implementation and Review

2.1 STRUCTURE OF THE TRILATERAL WADDEN SEA COOPERATION

Decision-making within the Trilateral Wadden Sea Cooperation (TWSC) is limited to two levels.

The Trilateral Wadden Sea Governmental Council (see figure) is the politically responsible body (Ministers) for the Cooperation. It establishes and oversees the Cooperation, approves its strategy, gives political leadership, assures international policy development, harmonisation and decision-making between the three governments.

The Wadden Sea Board is the governing body of the Cooperation. It prepares and implements the Strategy, oversees the operational and advisory bodies, and secures relations with key stakeholders.

The decision-making bodies are supported and advised by three types of operational and advisory bodies, namely advisors, including stakeholder representatives (WSF), Task Groups and Triennial conferences.

The Secretariat for the Trilateral Cooperation is the Common Wadden Sea Secretariat (CWSS). CWSS is responsible for support to the Board and the Council, implementation of the CWSS Work Plan, support to scientific networks and projects, communications and financial management.

Figure 1: Organizational Structure Trilateral Wadden Sea Cooperation
2.2 IMPLEMENTATION

The Wadden Sea Board is the responsible body for the supervision of the implementation of the Wadden Sea Plan. In addition, the Wadden Sea Board

- Develops, coordinates and implements the Cooperation’s policy on major issues (including responses to significant development plans and projects), for approval by the Trilateral Governmental Council.
- Provides advice to Ministers, *inter alia* through annual and triennial reports, the production of Quality Status Reports at regular intervals, and the organisation of International Scientific Wadden Sea Symposia.
- Approves terms of reference for the task groups and monitors their performance.

At the trilateral level, the Trilateral Monitoring and Assessment Program (TMAP) is the main programme for assessing progress in the implementation of the Wadden Sea Plan Targets. The TMAP provides the basis for the overall quality assessment of the Wadden Sea ecosystem (Quality Status Report: QSR) through which feedback to the Wadden Sea Board is arranged. In the framework of the implementation of the TMAP, an expert network has been established which is part of the feedback process of the Wadden Sea Plan implementation and which ensures the involvement of the operational management level in the trilateral process and which informs the regional level.

The Wadden Sea Plan is a joint framework policy and management plan for the Wadden Sea Area, and within that the National Parks the World Heritage Property and the Biosphere Reserves. For the specific purposes of cooperation on landscape and cultural heritage it is also the framework for the cultural entities. The Wadden Sea Plan will be implemented through the responsible authorities in the countries. The close relationship between the regional management of the Wadden Sea Area and the trilateral level is essential to ensure that both levels are well informed and aligned and that issues of common concern throughout the process are discussed and solved in close cooperation.

In order to perform the task of overseeing the implementation and further development of the Wadden Sea Plan, a close connection with the management level in the region is necessary.

2.3 REVIEW

An evaluation of the Wadden Sea Plan with a view to possible revisions takes place at 6 year intervals. Plans and measures launched in the framework of the relevant EC Directives operate within this 6 year timespan. In the framework of the World Heritage Convention, state parties must also report every 6 years on their World Heritage properties. The Wadden Sea Board will supervise the review in particular with regard to

- the status of the implementation of the projects and actions,
- the information from the Quality Status Reports and other assessment reports and scientific findings in relation to the Wadden Sea Plan,
- the ongoing relevance of policies and management measures,
- the consequences for the Wadden Sea Plan of emerging international legislation, in particular from the European Union.

The review will be discussed by the Wadden Sea Board to determine whether and to what extent the Wadden Sea Plan needs revision after the 6 year period.
3 Communication, Information and Education

3.1. WHAT AND WHY TO COMMUNICATE

Trilateral communication will secure public and political support for the protection and integrated management of the Wadden Sea as a shared entity and it will enhance the awareness of the Wadden Sea as a shared heritage.

The Trilateral Cooperation addresses the Wadden Sea as an entity which covers a.o. conservation and protection of all habitats and species, policy and management related issues, as well as research, monitoring and assessment. The transboundary and cross-sectoral aspects of such an ecosystem approach and the added value of the trilateral approach in respect to the national and international instruments, such as EU Directives, is the main contents of trilateral communication. The Wadden Sea Plan and Targets are an example of a transboundary management scheme at an ecosystem level which is also unique in a global perspective.

Effective communication of this Plan and the Targets between partners is a prerequisite to securing the active support of relevant authorities, interest groups and local citizens. The close cooperation of politicians, conservationists and scientists, combined with the awareness and enthusiasm of the people living in the region, is key to the successful implementation of the Plan.

The WSP is also the management plan for the World Heritage Property. The ecosystem approach of the Wadden Sea Plan and the Targets should therefore be the focus of trilateral communication.

3.2. TO WHOM AND HOW TO COMMUNICATE

Trilateral communication of the Wadden Sea Plan is focused both on internal and external target groups.

The internal communication ensures that key information has been accurately conveyed to the trilateral working groups (as well as experts groups and workshops), including observer organizations. In addition, the scientific network has been involved since the 1970s in supplying information to support management and monitoring (e.g. in scientific projects or on Scientific Wadden Sea Symposia).

External communication of the Wadden Sea Plan and its objectives to other target groups, such as the broad public, press and media, schools and universities, interest groups and international organizations, requires communication strategies tailored to the needs of the various groups.

Trilateral communication is carried out mainly via the CWSS through a website (for internal and external use), an e-mail newsletter (a successor to the printed Wadden Sea Newsletter), leaflets and posters, and thematic workshops and conferences in which the communication of the Wadden Sea Plan and Targets plays a central role.

Comprehensive reports such as the Quality Status Reports and other thematic reports (e.g. on bird trends) provide substantial scientific information from the TMAP to experts and the scientific community, including an assessment of the Targets and recommendations for trilateral management.

Network of Information Centers

The overall visitor experience of wildlife, culture and landscape along the Wadden Sea coast has been hugely improved through an extended net of small and large information
centers, visitor information systems, print and digital information and an increasing number of professional guides. This has been beneficial to people and nature.

From data supplied by Schleswig-Holstein, it can be extrapolated, that more than 3 million people a year receive information on the Wadden Sea through visiting centres or participating in guided tours. Thus, the flow of information and communication on all Wadden Sea matters has increased very well over the past ten years. Nevertheless, there is still a gap on coordinated information about the Trilateral Cooperation and the Wadden Sea Plan, i.e. the Wadden Sea as a crossborder protected nature area of global importance.

Websites

Extensive information on the Wadden Sea for the broad public is also available electronically. The common link to all aspects of trilateral Wadden Sea matters is the website of the Common Wadden Sea Secretariat (www.waddensea-secretariat.org).

The Dutch link to the Wadden Sea is via "Interwad". This organization develops and operates the website www.waddenzee.nl. This website is a focal point for information, questions, answers and opinions related to the Wadden Sea. The objectives are to inform people, to raise awareness and to feed the discussion on all Wadden Sea-related topics.

The German link is via the national park web site www.nationalpark-wattenmeer.de. This official website includes information on practically all aspects related to the protection and management of the German Wadden Sea and the activities of the national park authorities.

In Denmark, the website www.vadehav.dk is based on a cooperation between all the information and education centers in the Wadden Sea area (Vadehavets Formidlerforum). The objectives are, among others, to stimulate the cooperation between Wadden Sea related institutions, to stimulate awareness and to improve and extend the communication on nature and culture in the Wadden Sea region – with a special effort in relation to children. Vadehav.dk also keeps site visitors informed of the latest news and public events in the Wadden Sea.

Specific information on the Wadden Sea World Heritage Property can be found on www.waddensea-worldheritage.org

International Wadden Sea School

At present, 10 of the environmental education centres in The Netherlands, Germany and in Denmark work together in the International Wadden Sea School (IWSS) network (www.IWSS.org). The IWSS is a cross-border educational project for school classes and other groups of young people from the Wadden Sea countries initiated by the Wadden Sea Cooperation, running from 2003-2010. The aim of the IWSS is to enhance the awareness of the Wadden Sea Area as a shared natural heritage and to create an understanding among young people of the need to protect and sustainably manage the Wadden Sea region as a whole.

The Wadden Sea Forum

The involvement of stakeholders at the trilateral level is carried out via the Wadden Sea Forum (WSF). WSF has been consulted in the preparation of the WSP and is involved in several projects, relevant for the implementation of the WSP.

WSF is represented in the Wadden Sea Board as advisor, guaranteeing the interaction between the WSF members and the TWSC about the implementation of the WSP.

3.3. HOW TO PROCEED

1. Following the recommendation of an External Evaluation of the Trilateral Cooperation in 2007, existing means of communication such as the website and the newsletter will be given a wider audience through improved linking and distribution. We should also make full use of the attention generated by the positive results of the designation of the Dutch-German parts of the Wadden Sea Area as a World Nature Heritage Property, and capitalize on projects like Lancewad.
2. The CWSS will also continue its work to compile and disseminate all relevant scientific information on the Wadden Sea through web-based media, symposiums, workshops and reports, as well as through meetings with other relevant organizations and institutions.

3. The results of the TMAP and assessment of the WSP Targets will be made available for relevant authorities, interest groups and local citizens.

4. The external communication and public promotion of the Wadden Sea Plan will be undertaken by circulating it via existing successful communication networks and by cooperation with external partners and relevant stakeholders such as the Wadden Sea Forum.

5. The International Wadden Sea School (IWSS) has developed specific communication activities to promote the ideas of the Trilateral Cooperation for environmental education for school children, so effectively linking the educational network in the three countries. This experience should be used to strengthen public outreach and to communicate the Wadden Sea Plan to a broader public.
Map 1: Wadden Sea Area and Conservation Area
Map 2: Wadden Sea Habitats

The Wadden Sea

- Wadden Sea Area
- Offshore area
- Salt Marsh
- Dune, Beach and Sand
- Rural area and Marsh
- Estuary
- Tidal area
- Depth < 10 m
- Depth 10 - 20 m
- Depth > 20 m

Mainland
- Lakes and Rivers
- Postland
- Dune, Beach and Sand
- Geest
- Marsh

National Boundary

North Sea

THE NETHERLANDS

GERMANY

DENMARK

The Wadden Sea Area Mainland

Depth 10 - 20 m

Depth > 20 m

Depth < 10 m
Note: Parts of the identified cultural entities are located outside the Wadden Sea Cooperation Area as defined in §1 of the Introduction. 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.
Map 4: Natura 2000 Areas in the Wadden Sea
Annex 10

German Federal Nature Conservation Act, § 30 Legally Protected Biotopes, February 2012.

Extract from the Act on Nature Conservation and Landscape Management (Federal Nature Conservation Act – BNatSchG)


Status: Last amended by Article 5 of the Act of 6 February 2012 (Federal Law Gazette I p. 148)

(+++ Text reference as of: 1 March 2010 +++)

- unofficial translation: only the german version is legally binding –

§ 30 Legally Protected Biotopes

(1) Certain parts of nature and landscapes that are of special importance as biotopes are protected by law (general principle).

(2) Actions that could lead to the destruction or other significant adverse effects on the following biotopes shall be prohibited:

1. natural or semi-natural zones of running and standing inland waters, including their banks and relevant natural or semi-natural vegetation associated with the banks, together with their natural or seminatural sedimentation areas, backwaters and areas that are regularly flooded,

2. bogs, swamps, reeds and large-sedge reed beds, wetland meadows rich in sedges and rushes, springs and salt inland deposits,

3. open inland dunes, open natural boulder, rubble and scree slopes, clay and loess walls, dwarf-shrub, broom and juniper heaths, mat-grass communities dry meadows, heavy metal grassland, wood- and scrubland in xerothermic locations.

4. fen, bog and riparian forests, forests of ravines, slopes and screes, subalpine Larch and Larch-Swiss Pine forests,
5. open rock formations, alpine grasslands, snowbeds and elfin woodland,

6. rocky coasts and cliffs, coastal dunes and beach ridges, coastal lagoons, bodden waters with aggradation areas, salt meadows and tidal mud flats in coastal regions, seagrass beds and other marine macrophyte populations, reefs, sublittoral sandbanks, mud plains with burrowing megafauna, and species-rich gravel, coarse-sand and shell bottoms in marine and coastal regions.

The prohibitions set forth in Sentence 1 shall also apply to other biotopes protected by the laws of the Federal Länder.

(3) Exceptions to the prohibitions set forth in (2) may be permitted, upon application, if the adverse effects can be compensated for.

(4) If actions within the meaning of (2) are anticipated as a result of preparation, modification or supplementation of building development plans, a decision may be made, upon application by the municipality concerned and prior to preparation of the pertinent building development plan, regarding a necessary exception to, or exemption from, the prohibitions set forth in (2). If an exception has been permitted, or an exemption granted, no further exception or exemption shall be required for the implementation of a project that is otherwise permissible, if the implementation of the project begins within seven years following the entry into force of the relevant building development plan.

(5) In case of legally protected biotopes that have developed during the term of a contractual agreement or during participation in public programmes to restrict utilization, (2) shall not apply to the resumption of any permissible agricultural, forestry or fishing use within ten years after termination of the relevant contractual agreement or participation in the relevant public programmes.

(6) In case of legally protected biotopes that have developed in areas in which permissible extraction of natural resources has been restricted or interrupted, (2) shall not apply to the resumption of extraction within five years after the restriction or interruption.

(7) The legally protected biotopes shall be registered, and the registration shall be made suitably accessible to the public. Such registration and its accessibility shall be regulated by the laws of the Federal Länder.

(8) Protective regulations that are more stringent, including provisions regarding exceptions and exemptions, shall remain unaffected.
Annex 11

Act on the National Park “Niedersächsisches Wattenmeer” (NWattNGP)

of 11 July 2001 (Niedersächsisches Gesetz- und Verordnungsblatt (Nds. GVBl.)), page 443, as last amended by Section 3 of the Act on Reforming Nature Legislation (Gesetz zur Neuordnung des Naturschutzrechts) of 19 February 2010 (Niedersächsisches Gesetz- und Verordnungsblatt (NNds. GVBl.)), page 104)

Annexes 1 to 5

§ 1  National Park “Niedersächsisches Wattenmeer”

(1) The National Park “Niedersächsisches Wattenmeer”, whose scope is specified in the present Act, is located in the Wadden Sea area between the estuaries of the Elbe and Ems rivers.

(2) This Act adopts arrangements supplementing the Federal Nature Conservation Act (Bundesnaturschutzgesetz) of 29 July 2009 (Federal Law Gazette (BGBl.) I, page 2542) or derogating from it within the meaning of Article 72 (2) (3) Sentence 1 of the German Basic Law; the derogating arrangements shall not apply in the area of coastal waters (§ 56 (1) Federal Nature Conservation Act).

In addition to the provisions of this Act, the Niedersachsen Law Implementing the Federal Nature Conservation Act (Niedersächsisches Ausführungsgesetz zum Bundesnaturschutzgesetz) shall apply with the exception of § 3 (2), § 4, § 14 (1) to (8) and (10), §§ 15 to 22 (3), §§ 23 and 24 (1), § 25, § 43 (3) (1) No.s (1) to (4) and No.s (7) to (9), and § 45 (1) to (3) and (5) to (9), unless otherwise provided for in this Act.

§ 2  Protective Purpose

(1) The National Park is intended to preserve the special uniqueness of the natural resources and landscape of the Wadden Sea region off the Niedersachsen coast, including the characteristic appearance of the landscape, and to protect them from potential harm.

The natural processes in these habitats are to continue to take place.

The biological diversity of the fauna and flora species in the area of the National Park is to be preserved.

The special protective purpose of the individual areas in the Core Zone is described in Annex 1.

(2) The areas of the National Park, except for the Recreation Zone above the mean high-tide line (MHTL), a part of Core Zone I/50 and the areas on the edge of the coastal heathland between Sahlenburg and Berensch, are Special Protection Area under the European Birds Directive.

The areas specified in Sentence 1 also serve the purpose to ensure the survival and reproduction of the bird species occurring there as stated in Annex I and Article 4 (2) of the Council Directive of 2 April 1979 on the conservation of wild birds (79/409/EEC) (Official Journal of the European Communities No. L 103 Page 1), as amended; the main bird species and conservation objectives can be seen from Annex 5.
The areas of the National Park constitute a Site of Community Importance, unless otherwise specified in Annex 4. The areas referred to in Sentence 1 also serve to maintain or restore a favourable conservation status for the main habitat types and fauna and flora species stated in Annex 5; the conservation objectives can be seen from Annex 5.

§ 3
Area of Application

(1) The boundaries of the National Park can be seen from the attached maps, which are part of this Act:
1. Map on a scale of 1/100000 (Annex 2),
2. Reduced-size basic topographic maps of Germany (Deutsche Grundkarten) on a scale of 1/10000 (Annex 3).

(2) Areas enclosed by the National Park but not assigned to any of the zones listed in § 5 (1) are not part of the National Park.

(3) On the seaward side and in the estuaries of the Ems, Weser and Elbe rivers, as well as in Jade Bay, the line connecting the points shown in Annex 2 and defined by geographic coordinates (GPS – World Geodetic System 84) denotes the boundary of the National Park, unless the Niedersachsen state boundary or a guide wall runs through the estuaries of the Elbe and Weser rivers between two coordinate points, in which case the boundary is formed by the state boundary or by the base of the guide wall facing away from the river.

(4) The landward boundaries of the National Park are depicted by dotted lines in Annexes 2 and 3.

(5) In the boundary sections marked by an interrupted dotted line in Annexes 2 and 3, the mean high-tide line shall be definitive.

(6) In the sections marked by a red dotted line in Annexes 2 and 3, the seaward boundary of the dike (§ 4 (3) of the Niedersachsen Dike Act (Niedersächsisches Deichgesetz)) shall be definitive.

(7) With regard to the course of the boundaries marked by a continuous black dotted line in Annexes 2 and 3, the map shall be definitive.

(8) Where, pursuant to Sentence 3, the seaward boundary of the dike forms the boundary of the National Park, that boundary shall alter with the changes permitted to the existing dike.

(9) In such case the ministry responsible for nature conservation shall reissue Annexes 2 and 3, if necessary.

§ 4
Exclusion of Areas for Airfields and Landing Sites

(1) The state government shall be authorised, by way of regulation, to exclude areas on the East Frisian islands from the territory of the National Park to permit existing runways to be extended if the approvals required to do so, especially approvals in compliance with aviation legislation, have been obtained and such extension is imperative to fulfill the requirements laid down in § 1 (2) No. 1 of the Regulation on the Operation of Aircraft and Aeronautical Equipment (Betriebsordnung für Luftfahrzeug) of 4 March 1970 (Federal Law Gazette I p. 262), last amended by Article 3 of the state ordinance dated 3 August 1998 (Federal Law Gazette I pp. 2010, 2669).

(2) Where areas are excluded from the territory of the National Park pursuant to (1), the maps contained in Annexes 2 and 3 shall be modified mutatis mutandis within the framework of the state ordinance.
§ 5
Division into Zones

(1) The National Park is divided into three zones, as shown on the maps referred to in § 3 (1):
1. Core Zone (Zone I) – red,
2. Intermediate Zone (Zone II) – green,
3. Recreation Zone (Zone III) – yellow.

(2) On the maps of Annexes 2 and 3, the individual areas of Zone I are marked by numbers (Arabic numerals).

(3) Unless otherwise provided for in Paragraphs 3 and 4, the maps referred to in § 3 (1) shall be definitive regarding the boundaries between the zones.

1. The areas of the Core Zone are described in Annex 1.
2. The following shall apply to the demarcation of the Core Zone areas:
   1. Permanent boundary points shall be defined by geographic coordinates.
   2. Regarding the course of the Core Zone boundaries marked as permanent by an unbroken line in the maps referred to in § 3 (1), the map shall be definitive.
   3. The course of the Core Zone boundaries marked as subject to change by an interrupted line in the maps referred to in § 3 (1) is given in the information contained in Annex 1 – and, of those at sea, is given in combination with the official nautical chart applicable at the time. Where a Core Zone boundary is formed by the outer side of a sandbank or a sandbar, the chart datum line shall be definitive; where a Core Zone boundary is formed by a tidal inlet, a tidal channel or a narrow passage extending inland from a shore, the chart datum line on the side facing toward the Core Zone shall be definitive. Where the boundary is formed by buoys, by a dune base or by other locally identifiable natural or artificial landmarks, their location shall be definitive.

(4) The seaward boundary of the Recreation Zone is formed by the mean high-tide line, unless Annex 3 designates lower lying areas as the Recreation Zone.
1. In such a case the seaward boundary, marked by an interrupted line, is formed by the chart datum line; the lateral boundary there is formed by the straight line between marking posts which, pursuant to the requirements in Annex 3, are located at the mean high-tide line and above that line, respectively.
2. The demarcation of lower lying areas of the Recreation Zone can, additionally, be deduced from the information provided in Annex 3.

§ 6
Activities Prohibited in the Core Zone

(1) In the Core Zone, any activities that destroy, damage or alter the National Park or any of its component parts shall be prohibited
2. In derogation from Sentence 1, the activities described in §§ 7 to 11 and 16 as well as in Annex 1 shall be permitted.
3. Sentence 2 shall not apply to areas I/7, I/23, I/35, I/37, I/38, I/41, I/42 and I/45 in so far as such activities destroy, damage or alter the soil, its vegetation or Ross worm (Sabellaria spinulosa).

(2) To avoid posing a nuisance or danger to the protected natural resources of the National Park, it shall be prohibited to
1. disturb the natural quiet of the park through noise or in any other way,
2. disturb wild animals or seek them out, photograph or film them in their nesting, breeding, habitat and refuge areas,
3. allow dogs to go unleashed, unless this occurs in proper hunting practice,
4. light or tend fires at places other than those designated for such purpose,
5. fly kites – even from vehicles – model aircraft or other small aerial vehicles, launch balloons, or operate remote-controlled devices off-trail,

unless such activities are permitted by or pursuant to the present Act.

§ 7

Agriculture and Grazing in the Core Zone

(1)

1. Proper agricultural land use in areas protected by a primary dike, overflow dam or protective dunes, including the maintenance and renovation of associated installations, the grazing of horses on inhabited islands, and the erection of conventional pasture fences, livestock watering troughs and milking parlours, shall not be subject to any restriction except as provided for in Sentence 2.

2. It shall be prohibited to
   1. level surfaces, alter the surface profile existing at the time the present Act entered into force, or carry out excavations or embankment work,
   2. convert grassland into arable land,
   3. turn over grassland for new planting and seeding, and
   4. to use pesticides.

(2)

Proper agricultural land use in areas not protected by a primary dike, overflow dam or protective dunes, including the maintenance and renovation of associated installations and the grazing of horses on inhabited islands, shall be permissible in the manner and to the extent previously practiced.

(3)

The authority responsible for managing the state-owned areas not protected by a primary dike, overflow dam or protective dunes shall, while paying due regard to Section 2, carry out such management in agreement with the National Park Administration, implementing foreshore management measures in consultation with the dike association concerned.

(4)

1. The National Park Administration shall reach agreement with the relevant island communities and the demesne administration on the islands of Baltrum, Juist and Spiekeroog regarding a grazing plan for the state-owned salt meadow areas, following coordination with the haulage firm owners concerned.

2. The grazing plan shall lay down options for grazing, making particular allowance for the draught horses used for haulage purposes.

3. It shall ensure that the habitat types in the National Park affected by grazing and listed in Annex 5 are not substantially impaired and that avifauna are protected from any significant impairment and disturbance.

4. It shall take account of the level of grazing to date.

§ 8

Hunting in the Core Zone

(1)

The exercising of hunting rights shall be permitted in accordance with Niedersachsen’s Hunting Act (Niedersächsisches Jagdgesetz), unless provided for otherwise in (2).

(2)

1. The hunting of waterfowl shall be permitted only on the inhabited islands and with the consent of the National Park Administration.

2. Such consent may be granted for up to ten days per year per island; the days are not required to be consecutive.
The owner of the hunting grounds shall submit a request in writing no later than one week prior to the intended hunting date.

Approval shall be contingent on the hunting activities not significantly compromising the protective purpose of this Act.

No approval may be granted for the official census days that the relevant authority announces within the scope of the international water and wading bird census.

If a day approved for hunting is not used due to inclement weather, approval for a substitute day shall, upon request, be granted in accordance with Sentences 3 to 5.

(3) The National Park Administration may initiate measures to control the stock of huntable as well as other animal species, including waterfowl.

§ 9

Fishing in the Core Zone

(1) Professional fishing for fish and crab and professional static net fishing including the use of mud slides shall be permitted in the Core Zone; excepted shall be areas I/8, I/10, I/18, I/24, I/28, I/30, I/32, I/33, I/34 and I/48.

(2) Professional fishery on blue mussel including by-catches of Pacific oyster and mussel farming shall be permitted in areas I/2, I/4, I/5, I/6, I/13, I/14, I/21, I/22, I/27, I/29, I/31, I/36, I/39 and I/40 of the Core Zone, subject to the restrictions arising from Sentences 2 and 3.

On-bottom cultivation of blue mussels shall be permitted only within the framework of a management plan issued by the highest fisheries authority together with the highest nature conservation authority and updated every five years, regarding the protective purpose of the present Act; this shall also apply to area I/17 of the Core Zone in so far as the on-bottom cultivation of blue mussels is permissible there in accordance with Annex 1.

Fishery on mussels from wild mussel beds for human consumption shall be permitted only if the mussels there are continually covered by water.

(3) Sport and recreational fishing, including manual digging for lugworms from approved trails and areas, shall be permitted.

(4) Exercising of the participatory fishing rights entered in the Water Register for the shore of the River Weser shall be permitted for the inhabitants of the town of Langen, the municipality of Nordholz and the joint municipality of Land Wursten in areas I/44 and I/45 and in the south of the eastern part of area I/47 – bounded to the west by Neueappeler Tief and to the north by Oxstedter Tief – in so far as these areas can be travelled on foot.

§ 10

Further Uses of the Core Zone

The operation of honeybee mating areas on the islands and the removal of mud from approved areas for therapeutic purposes shall be permitted.

§ 11

Entering of the Core Zone

Entering of the Core Zone shall be permitted for the following purposes only:

1. for the uses permitted under §§ 7 to 10,
2. for mudflat walking, hiking, bicycle tours, horse riding, carriage riding, and supply trips along approved trails and routes,
3. for the use of public roads,
4. for the temporary stay of crews of recreational craft left high and dry directly near to fairways crossing the Core Zone as defined by § 2 (1) (1) of the German Traffic Regulations for Navigable Maritime Waterways (Seeschifffahrtsstrassen-Ordnung), within a radius of 50 metres around the craft,
5. for the inspection of craft left high and dry at approved locations near the harbour channel.

§ 12
Activities Prohibited in the Intermediate Zone

(1) The activities prohibited under § 6 shall apply mutatis mutandis to the Intermediate Zone, unless otherwise stipulated in the paragraphs below.

(2) Where consistent with the protective purpose, exceptions from § 6 (1) (1) may be granted in individual cases for
1. measures that result in damage to the vegetation cover,
2. the setting-up of vending facilities, kiosks, temporary structures, tents and wicker beach chairs, and
3. the installation of advertising billboards, posters or inscriptions.

Under the conditions stated in Sentence 1, exceptions may be granted for
1. the removal of sand or soil material to maintain coastal protection facilities, and
2. the removal of sand to maintain beaches in the Recreation Zone or on the East Frisian islands outside the National Park area.

(3) The activities prohibited under § 6 (2) (1) shall not apply to events designed to promote traditional customs.

Exceptions from the activities prohibited under § 6 (2) (2) may be granted in individual cases.

§ 13
Activities Permitted in the Intermediate Zone

(1) §§ 7 to 10 shall apply mutatis mutandis, unless otherwise stipulated in the paragraphs below.

(2) Exceptions from the restrictions laid down in § 7 (1) (2) Nos (3) and (4) may be granted in so far as this is consistent with the protective purpose.

(3) The waterfowl hunting restrictions applicable pursuant to § 8 shall not apply.

(4) The provisions in § 9 (2) shall apply mutatis mutandis throughout the Intermediate Zone.

(5) Sport and recreational fishing including digging for lugworms shall be permitted throughout the Intermediate Zone in accordance with § 14 (2).

(6) The inhabitants of the communities whose territories are located wholly or partly in the National Park (local population) shall be permitted to
1. pick edible mushrooms and berries, and,
2. in the months of May and June, harvest Sea Arrowgrass between the Weser and Elbe rivers for their own consumption.
In the context of land use in privately owned areas for forestry purposes consistent with the principles of good practice, the activities prohibited in § 12 (1) shall not apply with respect to

1. utilising, in small groups, forest stands of oak and aspen trees as well as forest stands of shrubby oak trees and replanting with the same hardwood types, and
2. utilising the other forest stands in the area of the town of Cuxhaven.

§ 14
Entering of the Intermediate Zone

(1)

1 Except for the purposes referred to in §§ 11, 12 and 13, the Intermediate Zone may be entered only on foot, in wheelchairs or in non-motorised vehicles.
2 The parking of caravans shall be prohibited.
3 Overnight stays shall be permitted only on recreational craft lying in approved areas near the ports of the East Frisian Islands, for one night.
4 Driving or parking motor vehicles may be permitted in derogation from Sentence 1 in so far as this is consistent with the protective purpose.

(2)

1 In the period from 1 April to 31 July of each year (birds’ breeding and rearing period), grassland areas and associated tidal inlets located between the mean high-tide line and the primary dike, protective dune base facing the tidal flats or seaward base of the coastal heathland boundary may be entered only via the approved areas, roads, trails or routes.
2 This restriction shall not apply to the exercising of activities permitted under §§ 7, 8, 9 (1), (2) and (4) and § 13 (6) (2).
3 Exceptions to the prohibition to enter in Sentence 1 may be granted in so far as this is consistent with the protective purpose.

(3)

1 The right of entry may be restricted by individual order for specific areas that, following the coming into force of this Act, develop into one of the habitat types referred to in Annex 5 or have taken on a significantly greater importance for the conservation of species listed in Annex 5, or in which respect the restriction is necessary to counteract any significant harm to the priority natural habitat types listed in Annex 5.
2 Such restrictions shall be limited to a maximum of five years.
3 Upon expiry of this period they may be extended once, by no more than five years, if the reasons for the restrictions still apply.

§ 15
Recreation Zone

(1)

1 The Recreation Zone may be used for recreation only, in particular for walking, camping, bathing, use of wicker beach chairs, horse riding, angling, collecting shells, kite flying, and sporting activities.
2 The use of motorised vehicles and the setting-up of beach shelters, mobile changing rooms, toilets and similar mobile facilities may be permitted in so far as this is necessary to make the activities permitted in Sentence 1 possible.

(2)

It is particularly prohibited

1. to pitch tents or park caravans,
2. to engage in noisy events and activities,
3. to drive dune buggies or similar motorised recreational vehicles on the beach, and
4. to erect any structures, unless permitted under Paragraph 1 Sentence 2.
(3) Noise-intensive events and activities may, with the exception of motorsport events, be permitted in individual cases in so far as this is consistent with the protective purpose.

(4) The removal and piling-up of sand for the purpose of beach maintenance shall be permitted in so far as this is consistent with the protective purpose.

§ 16

Exceptions

1. The prohibitions under this Act shall not apply to
   1. activities serving to fulfil public functions and responsibilities
      a) of the National Park Administration,
      b) in the collection of waste and the cleaning of beaches,
      c) of the water management administration, with the exception of new dike construction,
      d) in fisheries and hunting administration,
      e) relating to hazard prevention, disaster control, explosive ordnance disposal (EOD) and accident prevention including marine rescue,
      f) of the Niedersachsen State Office for Soil Research (Niedersächsisches Landesamt für Bodenforschung) [now: Niedersachsen State Office for Mining, Energy and Geology (Landesamt für Bergbau, Energie und Geologie)],
      g) of the Federal Maritime and Hydrographic Agency (Bundesamt für Seeschifffahrt und Hydrographie) (hydrographic surveying),
      h) of the Federal Waterways and Shipping Administration (Wasser- und Schifffahrtsverwaltung) in connection with the performance of its statutory tasks, especially in regard to government-owned shipping facilities and river constructions as well as the island protection installations to be maintained by the Federal Government pursuant to § 8 (5) of the Federal Waterways Act (Bundeswasserstrassengesetz), except waterways development,
   2. maintenance measures of the institutions in charge of dike preservation (coastal protection), with the exception of new dike construction,
   3. maintenance and repair measures
      a) in existing approaches to ports, including associated fairways,
      b) relating to existing roads and trails including associated wayside areas pursuant to § 2 (2) of the Niedersachsen Road Act (Niedersächsisches Straßenverkehrsgesetz),
      c) on existing overflow dams,
      d) on the dike foreshore in so far as they are required for dike safety pursuant to §§ 21 and 22 of the Niedersachsen Dike Act,
   4. the operation, maintenance and repair
      a) of pipe, cable and transmission lines for the supply of energy and water as well as for sanitation services, including associated facilities,
      b) postal and telecommunications services,
      c) existing rail and aviation facilities,
      d) existing water catchment and supply installations,
   5. the use and maintenance of existing, approved structures and associated open spaces in accordance with relevant permits,
   6. the use and maintenance of the camping site located in the Süderdünen district on the island of Spiekeroog, and
   7. navigation of the Federal waterways in water craft in accordance with Federal waterways legislation.

Where measures as referred to in Sentence 1 (1) and (2) are, either individually or in conjunction with other measures, capable of causing significant harm to the conservation resources specified in § 2 (2) and (3), they shall be permissible only if compliant with § 34 of the Federal Nature Conservation Act.
Deposition of sand, mud and dredged material shall not be excepted, apart from material relocated close to fairways and to parts of receiving water courses on the seaward side of dikes and in the mudflats.

The collection of waste and the cleaning of beaches pursuant to Sentence 1 (1) (b) in the Core Zone shall be excepted only during certain periods on which the authority in charge shall decide in agreement with the National Park Administration, paying due regard to the protective purpose.

§ 17
Exemptions

Where a request for exemption concerns projects or measures that are, individually or in conjunction with other projects or measures, capable of causing significant harm to the conservation resources specified in § 2 (2) and (3), the exemption may be granted only if compliant with § 34 of the Federal Nature Conservation Act.

§ 18
Approval of Trails and Other Parts of the Area

In so far as certain activities are permitted pursuant to §§ 9 to 11 and 14, as well as Annex 1, only on approved trails, routes, areas or other parts of the park, decisions regarding approval shall pay due regard to the protective purpose.

§ 19
- repealed -

§ 20
Information Activities

(1)

1 The National Park Administration shall engage in information and educational activities in so far as this is consistent with the protective purpose pursuant to § 2.
2 To do this, it shall maintain suitable facilities in the National Park area or have a part in their maintenance.

(2)

1 Such information and educational activities shall help realise the protective purpose of the National Park and foster appreciation for ecological issues.
2 They shall call attention to the opportunities for experiencing nature and for recreation in the National Park and communicate the aims of the National Park to the general public.
3 The work that takes place in the National Park, including scientific studies and research projects, shall be explained.

(3)

1 The National Park Administration shall work together with local communities and associations in its information and educational activities, undertaking such public relations work in regard to the National Park particularly through jointly maintained or state-funded facilities.
2 It may arrange for suitable persons to take part in the information and educational activities.
§ 21
Research

(1) 1. The National Park Administration shall carry out scientific studies of its own and coordinate external research projects.
2. Scientific monitoring and research in the National Park shall require approval by the National Park Administration, which may be granted if the aim of such monitoring and research is to:
   1. study the structure, development and relationships within natural and semi-natural biocoenoses,
   2. gain insights relevant to nature conservation,
   3. provide information on human impacts as well as for supra-regional monitoring of environmental changes, or
   4. assist the National Park Administration in the fulfilment of its tasks and responsibilities and is consistent with the protective purpose pursuant to § 2.

(2) Approval may be made subject to the requirement that the results of the monitoring and research activities be made available to the National Park Administration.

§ 22
Maintenance, Development and Restoration Measures

(1) 1. The National Park Administration may order certain measures to be taken for the purpose of maintaining, developing and restoring the National Park.
2. § 15 (2) and (3) of the Niedersachsen Law Implementing the Federal Nature Conservation Act shall apply mutatis mutandis.

(2) 1. Beyond the instances referred to in § 3 (4) of the Federal Nature Conservation Act, associations and other legal entities may, subject to their consent, be revocably entrusted also to:
   1. look after, maintain, develop and restore parts of the National Park and
   2. take on certain responsibilities in regard to species protection if they offer the guarantee of proper fulfilment of those responsibilities.
2. The National Park Administration shall make the decision in this respect.
3. Public authority powers shall be non-transferable.

§ 23
National Park Administration

The “Niedersachsen Wadden Sea” National Park Administration is a state authority based in Wilhelmshaven.

§ 24
Responsibilities

(1) In addition to the functions delegated to it under §§ 7, 8 and 20 to 22, the National Park Administration shall be responsible for:
   1. preparing concepts for conservation, maintenance, development and restoration measures,
2. coordinating the work of the lower nature conservation authorities active in the National Park area as well as of the authorities and associations that have support, maintenance, development and restoration functions, or are otherwise active, in the National Park,
3. approving exceptions and granting exemptions in the Intermediate Zone and Recreation Zone, except where the lower nature conservation authority according to (2) is responsible, and for granting exemptions in the Core Zone,
4. approving the trails, routes, areas and other parts of the park for certain activities pursuant to § 18 or, in an area overseen by a lower nature conservation authority, with the latter’s consent,
5. monitoring the condition of the protected resources specified in § 2 (3) in preparation for reporting to the European Commission,
6. exercising the right of pre-emption in favour of the State,
7. restricting the right of entry pursuant to § 14 (3), except where the lower nature conservation authority according to (2) is responsible,
8. imposing a limitation on uses, except where the lower nature conservation authority according to (2) is responsible, and [Funktionslos, da § 15 Abs, 5 gestrichen worden ist.]
9. other tasks including those delegated to the lower nature conservation authorities pursuant to § 32 (1) (1) of the Niedersachsen Law Implementing the Federal Nature Conservation Act, unless otherwise provided for in this Act.

(2) The lower nature conservation authorities shall be responsible for
1. approving exceptions and granting exemptions in respect of areas of the Recreation Zone and Intermediate Zone lying in their territory,
2. restricting the right of entry pursuant to § 14 (3) in respect of areas lying in their territory,
3. imposing a limitation on uses pursuant to § 15 (5) in respect of areas lying in their territory,
4. coordinating the removal of flotsam from the dike foreshore with the dike associations, and
5. deciding on earth removal projects in respect of areas of the Recreation Zone and Intermediate Zone lying in their territory.

(3) Where more than one exception or exemption for a project is necessary pursuant both to (1) and (2), the National Park Administration shall decide upon their approval in consultation with the community on whose territory the activity or measure is to take place.

(4) The National Park Administration shall be responsible for measures pursuant to § 3 (2) of the Federal Nature Conservation Act and § 2 (1) and (2) of the Niedersachsen Law Implementing the Federal Nature Conservation Act in the Core Zone and in the unincorporated parts of the Intermediate Zone and Recreation Zone lying below the mean high-tide line.

(5) The National Park Administration may set up a wardening service consisting of suitable persons to warden the territory of the National Park and ensure species protection.

§ 25
Regional Interests

The authorities responsible shall, when making decisions under this Act, take account of the interests of the local population in safeguarding and developing their living and working conditions and interests in regard to regional development, the business economy and tourism, as far as in accordance with the protection purpose.
§ 26  
State-owned Areas

The authorities deciding within the scope of their competence on the use of state-owned areas and on the granting of rights of use shall give special consideration in this regard to the protective purpose of this Act.

§ 27  
National Park Advisory Board

(1)  
1 The National Park Administration shall receive advice from an advisory board, which is to assist the National Park Administration in its task of fulfilling the protective purpose while taking due account of other public interests.  
2 The advisory board shall include  
   1. two members from the lower nature conservation authorities within whose sphere of responsibility parts of the National Park lie,  
   2. three members from the municipalities,  
   3. two members from the environmental associations which are recognised by the State of Niedersachsen pursuant to § 3 of the Environmental Appeals Act (Umwelt-Rechtsbehelfsgesetz) and, according to their statute, are active at national level,  
   4. one member each from the chambers of industry and commerce in whose geographic area parts of the National Park lie, the Chamber of Agriculture Niedersachsen (Landwirtschaftskammer Niedersachsen), the dike associations, the tourism associations, and the state athletic federation (Landessportbund),  
   5. two members from the scientific departments for nature protection/countryside conservation and biology at the universities in Niedersachsen,  
   6. one member from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), and  
   7. one member from the Weser-Ems Fisheries Association (Landesfischereiverband Weser-Ems).

(2)  
1 The members of the advisory board shall be appointed by the highest nature conservation authority for a period of five years.  
2 The members referred to in (1) Sentence 2 Nos. 1, 3 and 4 shall be appointed by the authorities, associations and bodies sending them, the members in (1) Sentence 2 No. 2 by the working group of the local umbrella organisations of Niedersachsen (Arbeitsgemeinschaft der kommunalen Spitzenverbände Niedersachsens), and the members in (1) Sentence 2 No. 5 by the mentioned scientific departments.  
3 § 12 (1) of the Niedersachsen Equal Rights Act (Niedersächsisches Gleichberechtigungsgesetz) shall apply mutatis mutandis to the appointments.

(3) If, in cases where a right of appointment is to be jointly exercised by more than one association and organisation ((1) Sentence 2 Nos. 1, 3, 4 and 5), an agreement cannot be reached between the relevant associations and organisations within a period of two months after invitation for such appointment, the highest nature conservation authority shall then decide.

(4)  
1 The National Park Administration shall consult with the advisory board  
   1. when preparing concepts for conservation, maintenance, development and restoration measures,  
   2. on research projects (in so far as the National Park Administration is involved in them),
3. when preparing information material about the National Park or parts thereof,
4. when setting up a wardening service, and
5. on matters of national and international cooperation (research, excursions, etc.).

The advisory board may submit proposals concerning measures in the National Park on which the National Park Administration is required, within the framework of its responsibilities, to state its position.

(5) The business of the advisory board, including representation by the advisory board members, shall be governed by the rules of procedure to be issued by the highest nature conservation authority.

§ 28
Administrative Offences

(1) It is an administrative offence for anyone, intentionally or by negligence, and without being authorised by or pursuant to this Act, to
1. engage in an activity in the Core Zone that, in breach of § 6 (1), will destroy, damage or alter that zone or individual parts thereof,
2. engage in a disruptive or dangerous activity in the Core Zone in breach of § 6 (2),
3. enter the Core Zone for purposes other than those permitted under § 11,
4. engage in an activity in the Intermediate Zone that, in breach of § 12 (1) in conjunction with § 6 (1), would destroy, damage or alter that zone or individual parts thereof,
5. engage in a disruptive or dangerous activity in the Intermediate Zone in breach of § 12 (1) in conjunction with § 6 (2),
6. enter the Intermediate Zone in breach of § 14,
7. in the recreation zone, violates the prohibitions of §15(2) or a restriction pursuant to §15 (5).

(2) An administrative offence under (1) Nos. 2, 3 and 5 to 7 may be penalised with a fine of up to 25,000 euros, and an administrative offence under (1) Nos. 1 and 4 with a fine of up to 50,000 euros.

(3) § 72 of the Federal Nature Conservation Act shall apply mutatis mutandis to administrative offences under this Act.

§ 29
- repealed -

§ 30
Transitional Arrangements

(1) Administrative authorisations, permissions, approvals and other administrative acts derogating from the protective measures in Core Zone areas I/51 and I/52 pursuant to §§ 6 to 11 which were in force on 8 November 2007 shall continue to apply.

(2) In regard to the proceedings pending on 28 February 2010, the following shall continue to apply:
1. in case of Core Zone area I/51, the provisions referred to in §§ 2 to 5 of the Regulation on the Conservation Area “Küstenmeer vor den Ostfriesischen Inseln” (Verordnung über das Naturschutzgebiet "Küstenmeer vor den Ostfriesischen Inseln") in the Niedersachsen 12 nm zone of the North Sea dated 31 October 2007 (Niedersächsisches Ministerialblatt, Page 1241),
2. in case of Core Zone area I/52, the provisions referred to in §§ 2 to 5 of the Regulation on the Conservation Area “Roter Sand” (Verordnung über das Naturschutzgebiet “Roter Sand”) in the Niedersachsen 12 nm zone of the North Sea dated 31 October 2007 (Niedersächsisches Ministerialblatt, Page 1243).

Authorisation procedures and preliminary decision procedures pertaining to individual conditions for authorisation shall be considered as one procedure within the meaning of Sentence 1.

(3) The plans and measures laid down as part of spatial planning or set out in the state’s planning programme (Landes-Raumordnungsprogramm) prior to 1 March 2010 in which nature conservation concerns have been taken into account in the spatial planning procedures on the basis of the provisions of a regulation referred to in (2) (1) No. 1 or 2, do not, in Core Zone areas I/51 and I/52, require any exemption pursuant to § 67 (1) and (2) (1) of the Federal Nature Conservation Act or § 17 of the present Act.

(4) § 60 (a) to (c) of the Niedersachsen Nature Conservation Act (Niedersächsisches Naturschutzgesetz) in the version in force until 31 October 2009 shall apply to the proceedings pending on 28 February 2010.

Annex 1

<table>
<thead>
<tr>
<th>No.</th>
<th>Core Zone area</th>
<th>Special protective purpose</th>
<th>Uses permissible beyond those in §§ 6 to 11 and 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/1</td>
<td>Dollart</td>
<td>Typical ecosystem of brackish water bay mudflats and adjoining outer dike areas with typical fauna and flora and special importance as a resting, breeding and foraging area for sea and wading and waterbirds, and offering particular variety of geo-historical and regional cultural phenomena.</td>
<td></td>
</tr>
<tr>
<td>I/2</td>
<td>Rysumer Nacken</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem with mudflats, sand- and shell banks, and dike foreshore</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manslagter Nacken</td>
<td>Outer dike and coastal mudflats between dike builder’s monument and Altendeich</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Core Zone area</td>
<td>Designation, extent</td>
<td>Special protective purpose</td>
</tr>
<tr>
<td>-----</td>
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<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>I/3</td>
<td>Greetsieler Nacken</td>
<td>Outer dike and coastal mudflats between Ley fairway and Pilsum</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem with mudflats, sandbanks, and dike foreshore</td>
</tr>
<tr>
<td>I/4</td>
<td>Leybucht [Bay]</td>
<td>Outer dike and bay coastal mudflats south of Norddeich mudflat fairway as far as former Norddeich radio station</td>
<td>Important resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem with sandbanks, mudflats, and dike foreshore</td>
</tr>
<tr>
<td>I/5</td>
<td>Leybucht Sands</td>
<td>Mudflat areas of Hamburger Sand, Kopersand, Mittelsand, Itzendorfplate and Branderplate south of Memmert mudflat fairway and north of Ley, Greetsieler Legde, Bantsbalje, Slapersbucht and Norddeich mudflat fairway, as far as Busetief [channel]</td>
<td>Important partial habitat for seals; important resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem with sandbanks as large as small islands and mudflats</td>
</tr>
<tr>
<td>I/6</td>
<td>Randzel and Lütje Hörn</td>
<td>Sands south of the Borkum mudflat fairway, excluding Boesgatje</td>
<td>Important partial habitat for seals; important resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem with sandbanks as large as small islands and mudflats</td>
</tr>
<tr>
<td>I/7</td>
<td>Randzel eelgrass communities</td>
<td>Area bounded by coordinates, south east of Blindes Randzeltag</td>
<td>Important eelgrass eelgrass communities</td>
</tr>
<tr>
<td>I/8</td>
<td>Borkum – Ost (east)</td>
<td></td>
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<tr>
<td>No.</td>
<td>Core Zone area</td>
<td>Special protective purpose</td>
<td>Uses permissible beyond those in §§ 6 to 11 and 16</td>
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<tr>
<td></td>
<td>Designation, extent</td>
<td>Important habitat for typical fauna and flora species and communities, and typical ecosystem including coastal dunes, wet dune slacks, and fen/marshes; breeding area important for harriers; important partial habitat for seals; important breeding, resting and foraging area for water, wading and meadow birds.</td>
<td>Picking of edible mushrooms and berries by local population for own consumption, ice-skating on Tüs kendörsee lake, except in shore areas defined by National Park Administration as particularly sensitive; collection of blue mussels and catching of grey mullet (Mugilidae) in tidal inlets by local population for own consumption.</td>
</tr>
</tbody>
</table>

| I/9 | Borkum – Nordstrand (north beach) | Embryonic shifting dunes north of base of Kobbe and Oldmanns-Olde dunes, as far as 50 m seaward of mean high-tide line | Entry on foot, outside of designated pathways, in the period from 16 July to 1 March of every year |

| I/10 | Borkum – Greune Stee and Ronde Plate | Dunes, salt meadows and mudflats on southern part of island, bounded by southern and Wolde dunes, railway embankment, port, south beach and salt meadows, north of railway embankment from eastern dike as far as Reededeich [dike] | Important breeding, resting and foraging area for water and wading birds; breeding area important for harriers; important habitat for typical fauna and flora species and communities, and typical ecosystem including coastal dunes, wet dune slacks, fens/marshes, dike foreshore and salt meadows, coastal mudflats, and sandbanks |

| I/11 | Hohes Riff | Sands and mudflats west of Borkum | Important partial habitat for seals; breeding area important for wading birds; typical ecosystem including sandbanks and coastal mudflats |

| I/12 | Borkum Riff | Wadden sea and territorial waters north of Borkum, Kachelotplate [dune island] and island of Juist as far as traffic separation scheme | Specific ecosystem with gravel-to-stony bottoms, and important resting and foraging area for loons, sea ducks, terns and gulls |

<p>| I/13 | Kachelotplate [dune | | | |</p>
<table>
<thead>
<tr>
<th>No.</th>
<th>Core Zone area</th>
<th>Special protective purpose</th>
<th>Uses permissible beyond those in §§ 6 to 11 and 16</th>
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</thead>
<tbody>
<tr>
<td>1/14</td>
<td>Juist – western part and Schillplate [sandbank] Dunes, dike foreshore, and island mudflats east of northern Haaksgat fairway and north of Juister Balje [channel]</td>
<td>Important partial habitat for seals; important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem including coastal dunes, wet dune slacks, bodies of standing water, dike foreshore, island mudflats, sandbanks, and salt meadows with extensive tidal inlet systems</td>
<td>Picking of edible mushrooms and berries and collection of blue mussels by local population for own consumption; use of Hammersee lake by local population for ice skating and ice sailing; landing and walking at approved location of rock fill on northern edge of Juister Balje, south of trail leading to rescue shelter, including access to walking trail for crews of vessels home-ported in Juist or Norderney</td>
</tr>
<tr>
<td>1/15</td>
<td>Juist – Mitte (centre of island)</td>
<td>Salt meadow area with extensive tidal inlet systems; important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities; typical ecosystem</td>
<td></td>
</tr>
<tr>
<td>1/16</td>
<td>Juist – eastern part</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities; typical ecosystem</td>
<td></td>
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<td>No.</td>
<td>Core Zone area</td>
<td>Special protective purpose</td>
<td>Uses permissible beyond those in §§ 6 to 11 and 16</td>
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<tr>
<td>I/17</td>
<td>Norderney</td>
<td>Important breeding, resting and foraging area for wading and water birds; breeding area important for harriers; important habitat for typical fauna and flora species and communities; and typical ecosystem including sandy beaches, coastal dunes, wet dune slacks, fens/marshes, slack water areas, dike foreshore and salt meadows, island mudflats and sandbanks; area with geoscientifically important forms of landscape (island formation)</td>
<td>Picking of edible mushrooms and berries by local population for own consumption; on-bottom cultivation of blue mussels north of Norderney mudflat fairway as far as straight line passing through points 7° 14’ 36” E/53° 41’ 41” N and 7° 16’ 26” E/53° 41’ 42” N, as well as in area bounded by Norderney mudflat fairway and traverse with following coordinates: 7° 19’ 45” E/53° 42’ 13” N, 7° 19’ 31” E/53° 42’ 20” N, 7° 19’ 29” E/53° 42’ 29” N, 7° 20’ 29” E/53° 42’ 42” N.</td>
</tr>
<tr>
<td>I/18</td>
<td>Aussendeich (outer dike)</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem including coastal mudflats and dike foreshore</td>
<td></td>
</tr>
<tr>
<td>I/19</td>
<td>Baltrum – east</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem including coastal dunes and wet dune slacks</td>
<td>Picking of edible mushrooms and berries by local population for own consumption; walking off-trail beyond approved routes in period from 16 July to 1 March of every year</td>
</tr>
<tr>
<td>I/20</td>
<td>Baltrum – Osterhook</td>
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<td>No.</td>
<td>Core Zone area</td>
<td>Special protective purpose</td>
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<tr>
<td></td>
<td>Designation, extent</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical flora species and communities, and typical ecosystem including salt meadows and island mudflats</td>
<td>Picking of edible mushrooms and berries and collection of blue mussels by local population for own consumption; skating by locals in areas west of eastern enclosing dike, sporting use of volleyball facility at NTB [Gymnastics Association of Niedersachsen] club house, as previously</td>
</tr>
<tr>
<td>I/21</td>
<td>Dornumer Nacken</td>
<td>Important partial habitat for seals; important breeding, resting and foraging area for water and wading birds</td>
<td></td>
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<tr>
<td>I/22</td>
<td>Neiderplate</td>
<td>Important resting and foraging area for wading and water birds; typical ecosystem including coastal mudflats and dike foreshore</td>
<td></td>
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<tr>
<td>I/23</td>
<td>Hungatplate</td>
<td>Important eelgrass communities</td>
<td></td>
</tr>
<tr>
<td>I/24</td>
<td>Langeoog – Flinthörn</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem including sandy beaches, coastal dunes, dike foreshore; area with geoscientifically important forms of landscape (island formation)</td>
<td>Picking of edible mushrooms and berries and collection of blue mussels by local population for own consumption.</td>
</tr>
<tr>
<td>I/25</td>
<td>Langeoog – south east</td>
<td>Important partial habitat for seals; important breeding, resting, foraging and moulting area for wading and water</td>
<td>Picking of edible mushrooms and berries, collection of blue mussels, and fishing for grey mullet (<em>Mugilidae</em>) in tidal</td>
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<tr>
<td>No.</td>
<td>Core Zone area</td>
<td>Designation, extent</td>
<td>Special protective purpose</td>
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<tr>
<td>I/26</td>
<td>Langeoog – north east</td>
<td>North beach, from access to “Meierei” [restaurant] at eastern end of island, including offshore mudflats and Süderiff from base of dune, as far as Otzumer Balje/Hullbalje fairway</td>
<td>Important partial habitat for seals; important breeding, resting and foraging area for wading and water birds typical ecosystem including embryonic dunes and sandbanks; area with geoscientifically important forms of landscape (island formation)</td>
</tr>
<tr>
<td>I/27</td>
<td>Janssand, Roggsand and Stüversplate Mudflats between Stüverslegde, Hullbalje, Schillbalje and Baklegde fairways and Neuharlingersiel fairway</td>
<td>Important partial habitat for seals; typical ecosystem including sandbanks and coastal mudflats; area with geoscientifically important forms of landscape</td>
<td></td>
</tr>
<tr>
<td>I/28</td>
<td>Spiekeroog – Westergroen and Ostergroen Western and central parts with dunes and salt meadows between former railway line – excluding camping site area east of railway line at rescue station – and Spiekeroog village, as well as salt meadows of Südergroen (eastern part) and Ostergroen</td>
<td>Important breeding, resting and foraging area for wading and water birds; important population for own habitat for fauna and flora species and communities, and typical ecosystem</td>
<td>Picking of edible mushrooms and berries by local population for own consumption.</td>
</tr>
<tr>
<td>I/29</td>
<td>Spiekeroog – Ostplate</td>
<td></td>
<td></td>
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<tr>
<td>No.</td>
<td>Core Zone area</td>
<td>Special protective purpose</td>
<td>Uses permissible beyond those in §§ 6 to 11 and 16</td>
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<td></td>
<td>Spiekeroog island mudflats, Swinnplate and Bakenplate as far as Alte Harle/Muschelbalje fairway</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem including coastal dunes, wet dune slacks, coastal mudflats, dike foreshore, sandbanks and sandy beaches; area with geoscientifically important forms of landscape (island formation); important partial habitat for seals</td>
<td>Collection of blue mussels and fishing for grey mullet (Mugilidae) in tidal inlets by local population for own consumption; transport of heavy goods along route from floodgate (Deichtor) to former pier near Hermann-Lietz-Schule (edge of mudflats)</td>
</tr>
<tr>
<td>I/30</td>
<td>Schwerinsaussengroden</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem including coastal mudflats and dike foreshore</td>
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<td></td>
<td>Poldered marshland (Groden) including offshore land reclamation areas and mudflats between Neuharlingersiel and Harlesiel</td>
<td></td>
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</tr>
<tr>
<td>I/31</td>
<td>Elisabethaussengroden and mudflat area</td>
<td>Important partial habitat for seals; important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem including sandy beaches, dike foreshore, and coastal mudflats</td>
<td></td>
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<td></td>
<td>Poldered marshland areas on seaward side of dike (Aussengroden) and eastern Harlesiel mudflats; Langer Jan, Hoher Rücken, Südersand and Neues Brack between Carolinensieler Balje, Telegraphenbalje, Wangerooge mudflat fairway, Minsener Balje and Minsener Oog mudflat fairway</td>
<td></td>
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</tr>
<tr>
<td>I/32</td>
<td>Wangerooge – west</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem including coastal dunes, poldered marshland areas, and island mudflats</td>
<td>Picking of edible mushrooms and berries by local population for own consumption.</td>
</tr>
<tr>
<td></td>
<td>Poldered marshland areas on landward [Westinnengroden] and seaward [Westaussengroden] side of dike, saline bay (Salinenbucht) and western part of poldered “Mittelaussengroden” marshland area</td>
<td></td>
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<tr>
<td>I/33</td>
<td>Wangerooge – east</td>
<td></td>
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<td>No.</td>
<td>Core Zone area</td>
<td>Special protective purpose</td>
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<td></td>
<td>Designation, extent</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem including sandy beaches, coastal dunes, salt meadows and island mudflats</td>
<td>Landing and walking by crews of recreational craft on approved area between beach marker buoy and old pier, including access to circular track around island, giving special consideration to breeding habitat of little tern (<em>Sterna albifrons</em>),</td>
</tr>
<tr>
<td></td>
<td>Parts of Ostinnengroden poldered marshland area, dune ridge east of third dune overpass beginning at Café Neudeich as well as at salt meadows and mudflat areas between Georgspad and Blauer Balje</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem including sandy beaches, coastal dunes, salt meadows and island mudflats</td>
<td>Landing and walking by crews of recreational craft on approved area between beach marker buoy and old pier, including access to circular track around island, giving special consideration to breeding habitat of little tern (<em>Sterna albifrons</em>),</td>
</tr>
<tr>
<td>I/34</td>
<td>Minsener Oog</td>
<td>Important breeding, resting and foraging area for wading and water birds; typical ecosystems including dry sandbars and coastal mudflats</td>
<td>Swimming by visitors at Hooksiel beach.</td>
</tr>
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<td></td>
<td>From outer boundary of National Park as far as Minsener Oog fairway, Minsener Balje, and Blauer Balje</td>
<td>Important breeding, resting and foraging area for wading and water birds; typical ecosystems including dry sandbars and coastal mudflats</td>
<td>Swimming by visitors at Hooksiel beach.</td>
</tr>
<tr>
<td>I/35</td>
<td>Crildumersiel</td>
<td>Foraging area for wading and water birds and waterfowl; eelgrass communities; habitat for typical fauna and flora species and communities, especially of <em>Ross worm</em> (<em>Sabellaria spinulosa</em>)</td>
<td>Swimming by visitors at Hooksiel beach.</td>
</tr>
<tr>
<td></td>
<td>Dike foreshore and mudflat areas up to 50 m on seaward side of chart datum line between Crildumersiel dike overpass and Wangerland pumping station, as well as channel area between chart datum line and outer boundary of National Park southward in direction of Hoooksier Hafentief [harbour channel]</td>
<td>Important breeding, resting and foraging area for wading and water birds; typical ecosystems including dry sandbars and coastal mudflats</td>
<td>Swimming by visitors at Hooksiel beach.</td>
</tr>
<tr>
<td>I/36</td>
<td>Jadebusen (Jade Bay)</td>
<td>Important partial habitat for seals; important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem including bay mudflats, dike foreshore, and floating peat bog; area with geoscientifically important forms of landscape (tidal inlet system, floating peat bog)</td>
<td>Swimming by visitors at Hooksiel beach.</td>
</tr>
<tr>
<td>No.</td>
<td>Core Zone area Designation, extent</td>
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<td>exception of Core Zone area</td>
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<td>I/38</td>
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<tr>
<td>I/37</td>
<td>Vareler Rinne (Varel Channel)</td>
<td>Habitat for typical fauna and flora species and communities, especially of <em>Ross worm</em> (<em>Sabellaria spinulosa</em>)</td>
<td>Uses permissible beyond those in §§ 6 to 11 and 16</td>
</tr>
<tr>
<td>I/38</td>
<td>Seefelder Watt</td>
<td>Important eelgrass communities</td>
<td></td>
</tr>
<tr>
<td>I/39</td>
<td>Hoher Weg</td>
<td>Important habitats for seals; important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem including sandbanks, coastal dunes, coastal mudflats, and dike foreshore; area with geoscientifically important forms of landscape (island formation). Access to island of Memmert requires official authorisation.</td>
<td></td>
</tr>
<tr>
<td>I/40</td>
<td>Grosse Plate west of River Weser</td>
<td>Important partial habitat for seals; important resting and foraging area for wading and water birds; important habitat for typical fauna and flora species and communities, and typical ecosystem</td>
<td></td>
</tr>
<tr>
<td>I/41</td>
<td>Burhaver Plate [sandbank]</td>
<td>Important eelgrass communities</td>
<td></td>
</tr>
<tr>
<td>I/42</td>
<td>Waddenser Plate [sandbank]</td>
<td>Important eelgrass communities</td>
<td></td>
</tr>
<tr>
<td>I/43</td>
<td>Groden [poldered marshland areas]</td>
<td>Important breeding, resting and foraging area for wading and water birds; typical ecosystem including coastal</td>
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<tr>
<td>No.</td>
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<td>Designation, extent</td>
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<tr>
<td>I/44</td>
<td>Rintzeln</td>
<td>Rintzeln dike foreshore and mudflats between Wremer Tief, Wurster Arm and Schmarrener Loch</td>
<td>Important resting and foraging area for wading and water birds; typical ecosystem including coastal mudflats and dike foreshore</td>
</tr>
<tr>
<td>I/45</td>
<td>Schmarrener Watt</td>
<td>Mudflats off outer dike, extending over some 500 m in width from Schmarren to Solthörn</td>
<td>Important eelgrass communities</td>
</tr>
<tr>
<td>I/45a</td>
<td>Paddingbütteler Aussendeich (outer dike)</td>
<td>Dike foreshore between Paddingbüttel and Dorumer-Neufeld</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species, and typical dike foreshore ecosystem</td>
</tr>
<tr>
<td>I/46</td>
<td>Platen [sandbanks]</td>
<td>Robbenplate, bounded on eastern side by Wurster Arm and Tegeler Plate, between Dwarsgat [buoys] and Tegeler Rinne [channel]</td>
<td>Important partial habitat for seals; important resting, moulting and foraging area for wading and water birds; typical ecosystem including sandbanks and coastal mudflats</td>
</tr>
<tr>
<td>I/47</td>
<td>Knechtsand [sandbank]</td>
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<td>No.</td>
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<tr>
<td>Kleine Knechtsände [sandbanks], Eversand, Schwarze Gründe, Robben-Hohenhörn-Sände, Spiekaer Barre, Neuwerker Watt, Kleinwatt, and eastern Sahlenburger Watt between Spieka-Neufeld and Werner Wald [woods], as well as outer dike at Arenscher Ufer [shore] including offshore mudflats, bounded by Wurster Arm and Tegeler Rinne channels, National Park outer boundary, Robbenloch, Nordertill as far as southern Schaafsand and Hamburg state boundary, excluding south-western Sahlenburger Watt, summer dike near Berensch-Arenschtet/Spieka Neufeld, Spiekaer Tief [channel] and Weser-Elbe mudflat fairway.</td>
<td>Important partial habitat for seals; important breeding, resting, moulting and foraging area for wading and water birds; typical ecosystem including sandbanks, coastal mudflats, and dike foreshore; area with geoscientifically important forms of landscape (island formation)</td>
<td>Use of swimming area and access routes by visitors to Posterholungsheim [holiday home] and Landschulheim [school hostel]; harvesting of cabbage in approved areas in months of May and June by local population for own consumption.</td>
<td></td>
</tr>
<tr>
<td>I/48 Eitzensand Sands west of Weser-Elbe mudflat fairway</td>
<td>Important partial habitat for seals; important breeding, resting, moulting and foraging area for wading and water birds; typical ecosystem including coastal mudflats</td>
<td></td>
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</tr>
<tr>
<td>I/49 Duhner Anwachs Salt meadows including offshore mudflats</td>
<td>Important breeding, resting and foraging area for wading and water birds; important habitat for typical fauna and flora species</td>
<td>Operation of beach train along route approved by National Park Administration</td>
<td></td>
</tr>
<tr>
<td>I/50 Duhner Heide Heath-covered cliff (Geestkiff) and dunes bordering on Core Zone area I/49 to south east</td>
<td>Important habitat for endangered fauna and flora species and communities; maritime dune areas and heath-covered cliff including crowberry vegetation on coastal heath and scattered transition moors</td>
<td>Operation of beach train along route approved by National Park Administration</td>
<td></td>
</tr>
<tr>
<td>I/51 Territorial sea off East Frisian Islands From “Borkumriff” [Borkum Reef] maritime area as far as “Mellumplate” [Mellum Flats], interrupted by Intermediate</td>
<td>Important resting, migration and wintering area for seabirds; with depth of 10 to 20 m, important foraging area</td>
<td>Dumping of dredging spoils according to Handlungsanweisung zur Unterbringung von Baggergut</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>No.</th>
<th>Core Zone area</th>
<th>Special protective purpose</th>
<th>Uses permissible beyond those in §§ 6 to 11 and 16</th>
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</thead>
<tbody>
<tr>
<td>Zone projecting northward of island of Baltrum</td>
<td>for breeding birds on East Frisian Islands</td>
<td>im Küstenbereich [Instructions for the Management of dredged material in coastal waters] issued by the Federal Waterways and Shipping Administration. Sport and recreational fishing. Installation of supply and energy lines in so far as consistent with protective purpose. Removal of sand or soil material to preserve island and coast protection installations in so far as consistent with protective purpose.</td>
<td></td>
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</tbody>
</table>

I/52 Roter Sand

Nordergründe [offshore wind farm] some 20 km north west of island of Mellum as far as Hamburg state boundary, on nautical chart.

Area of influence for estuaries of Elbe and Weser rivers with high level of biological productivity (phyto- and zooplankton), accumulation of food particles, and high density of fish. With depth of 10 to 20 m, important foraging area for seabirds, in particular Sandwich Tern (Sterna sandvicensis), Little Gull (Larus minutus) and Lesser Black-backed Gull (Larus fuscus). Important resting and wintering area for Red-throated Diver (Gavia stellata) and Common Gull (Larus canus).

Dumping of dredging material according to Handlungsanweisung zur Unterbringung von Baggergut im Küstenbereich [Instructions for the management of dredged material in Coastal Areas] issued by the Federal Waterways and Shipping Administration (HABAK-WSV). Sport and recreational fishing. Installation of supply and energy lines in so far as consistent with protective purpose. Removal of sand or soil material to preserve island and coast protection installations in so far as consistent with protective purpose.

Annex 2

(Re § 3 (1) Sentence 1 No. 1)

Maps on a scale of 1/100000 (western sheet, eastern sheet)

Not shown here.

Annex 3

(Re § 3 (1) Sentence 1 No. 2)
Maps on a scale of 1/10000 (Sheets 1 to 35)

Not shown here.

Annex 4

(Re § 2 (3) Sentence 1)

Maps of the National Park “Niedersächsisches Wattenmeer” as a Site of Community Importance on a Scale of 1/50000 (Sheets 1 to 4)

Not shown here.

Annex 5

(Re § 2 (2) Sentence 2, and § 3 Sentence 2)

Key habitat types and species as well as conservation objectives of the “Niedersachsen Wadden Sea and adjacent Territorial Sea” (“Niedersächsisches Wattenmeer und angrenzendes Küstenmeer”) Special Protection Area (Birds Directive) and of the “Niedersachsen Wadden Sea National Park” (“Nationalpark Niedersächsisches Wattenmeer”) as a Site of Community Importance (Habitats Directive)


1. Priority natural habitat types

Coastal lagoons (lagoons) (1150)

Fixed coastal dunes with herbaceous vegetation (“grey dunes”) (2130)

Decalcified dunes with Empetrum nigrum (2140)

Atlantic decalcified fixed dunes (Calluno-Ulicetea) (2150)

2. Other natural habitat types

Sandbanks which are slightly covered by sea water all the time (1110)

Estuaries (1130)

Vegetation-free mudflats and sand flats not covered by seawater at low tide (1140)

Large shallow inlets and bays (areas of shallow water and eelgrass beds) (1160)

Reefs (1170)

Salicornia and other annuals colonising mud and sand (1310)

Spartina swards (Spartinion maritimae) (1320)
Atlantic salt meadows \((Glauco-Puccinellietalia maritimae)\) (1330)

Embryonic shifting dunes (2110)

Shifting dunes along the shoreline with \(Ammophila arenaria\) (“white dunes”) (2120)

Dunes with \(Hipophaë rhamnoides\) (2160)

Dunes with \(Salix repens ssp. argentea\) (\(Salicion arenariae\)) (2170)

Wooded dunes of the Atlantic, Continental and Boreal region (2180)

Humid dune slacks (2190)

Oligotrophic to mesotrophic standing waters with vegetation of the \(Littorelletea uniflorae\) and/or of the \(Isoeto-Nanojuncetea\) (3130)

Natural eutrophic lakes with \(Magnopotamion\) or \(Hydrocharition\)-type vegetation (3150)


1. Mammals

   Grey seal \((Halichoerus grypus)\)

   Harbour porpoise \((Phocoena phocoena)\)

   Common seal \((Phoca vitulina)\)

2. Fish

   Twaite shad \((Alosa fallax)\)

   River lamprey \((Lampetra fluviatilis)\)

   Sea lamprey \((Petromyzon marinus)\)

3. Plants

   Fen orchid \((Liparis loeselii)\)

III. Bird species in the European bird sanctuary


   Sandwich tern \((Sterna sandvicensis)\)

   Common tern \((Sterna hirundo)\)

   Golden plover \((Pluvialis apricaria)\)

   Hen harrier \((Circus cyaneus)\)

   Arctic tern \((Sterna paradisaea)\)

   Spoonbill \((Platalea leucorodia)\)
Barnacle goose (*Branta leucopsis*)
Bar-tailed godwit (*Limosa lapponica*)
Bittern (*Botaurus stellaris*)
Marsh harrier (*Circus aeroginosus*)
Avocet (*Recurvirostra avosetta*)
Kentish plover (*Charadrius alexandrinus*)
Short-eared owl (*Asio flammeus*)
Red-throated diver (*Gavia stellata*)
Peregrine (*Falco peregrinus*)
Little gull (*Larus minutus*)
Little tern (*Sternula albifrons*)

Dunlin (*Calidris alpina*)
Eurasian Oystercatcher (*Haematopus ostralegus*)
Twite (*Carduelis flavirostris*)
White-fronted goose (*Anser albirostris*)
Common shelduck (*Tadorna tadorna*)
Black-legged kittiwake (*Rissa tridactyla*)
Spotted redshank (*Tringa erythropus*)
Common eider (*Somateria mollissima*)
Eurasian skylark (*Alauda arvensis*)
Greylag goose (*Anser anser*)
Eurasian curlew (*Numenius arquata*)
Common greenshank (*Tringa nebularia*)
Lesser black-backed gull (*Larus fuscus*)
Lapwing (*Vanellus vanellus*)
Grey plover (*Pluvialis squatarola*)
Red Knot (*Calidris canutus*)
Great cormorant (*Phalacrocorax carbo*)

Common teal (*Anas crecca*)

Black-headed gull (*Larus ridibundus*)

Northern shoveler (*Anas clypeata*)

Great black-backed gull (*Larus marinus*)

Shorelark (*Eremophila alpestris*)

Wigeon (*Anas penelope*)

Whimbrel (*Numenius phaeopus*)

Brent goose (*Branta bernicla*)

Redshank (*Tringa totanus*)

Sanderling (*Calidris alba*)

Ringed plover (*Charadrius hiaticula*)

Yellow wagtail (*Motacilla flava*)

Curlew sandpiper (*Calidris ferruginea*)

Herring gull (*Larus argentatus*)

Pintail (*Anas acuta*)

Wheatear (*Oenanthe oenanthe*)

Turnstone (*Arenaria interpres*)

Mallard (*Anas platyrhynchos*)

Rock pipit (*Anthus petrosus*)

Common gull (*Larus canus*)

Razorbill (*Alca torda*)

Common scoter (*Melanitta nigra*)

Guillemot (*Uria aalge*)

Black-tailed godwit (*Limosa limosa*)

**IV. Description of conservation objectives for the Natura 2000 site**

a) stable or increasing (within natural variability) natural range as well as areas,

b) suitable structure and functions for the long term,

c) favourable conservation status of typical species.

2. General conservation objectives for species according to Annex II of Council Directive 92/43/EEC, including the typical species of the habitat types

a) populations stable (within natural variability) on a long-term basis as a viable component of their natural habitats,

b) no reduction in the natural range,

c) suitable habitats of sufficient size for all life cycle stages such as reproduction, breeding, moulting, migration, resting, wintering and searching for food, and the possibility for unimpeded migration and movements between the partial habitats, including in the surroundings of the National Park.

3. Special conservation objectives for habitats and species of the maritime areas

a) Shallow inlets and bays (1160), sandbanks slightly covered by seawater (1110), and reefs, either of geogenic origin or biogenic concretions (1170), where good water quality, natural structures, natural dynamic processes and persistent populations of typical species are present. This implies:

   aa) natural hydrodynamic and morphological conditions,

   bb) natural sandbank structures with ridges and slacks as well as sediment redeposition as a result of wave action and currents,

   cc) natural sublittoral mussel beds with all life-cycle stages and intact communities,

   dd) natural distribution of the various coarse and fine substrates of the sea floor,

   ee) favourable conditions for new European oyster beds, *Sabellaria* reefs and sublittoral eelgrass beds to develop.

b) Extensive low-disturbance habitats connected to the surrounding environment for persistent populations of harbour porpoise (*Phocoena phocoena*), grey seal (*Halichoerus grypus*), common seal (*Phoca vitulina*), twaite shad (*Alosa fallax*), sea lamprey (*Petromyzon marinus*), and river lamprey (*Lampetra fluviatilis*).

c) Low-disturbance marine environments as foraging, resting and moulting areas for seabird species such as the red-throated diver (*Gavia stellata*), common eider (*Somateria molissima*), common scoter (*Melanitta nigra*), and sandwich tern (*Sterna sandvicensis*).

4. Special conservation objectives for habitats and species of the mudflats including the estuaries

a) Semi-natural salt- and brackish water mudflats for habitat types 1130, 1140, 1310 and 1320 where good water quality, natural structures, natural dynamic processes and persistent populations of typical species are present. This implies:

   aa) natural hydrodynamics and an undisturbed sediment supply,
bb) natural distribution of mudflats and sand flats as well as areas covered with eelgrass common glasswort and spartina vegetation,

cc) natural tidal inlet systems,

dd) natural eulittoral mussel beds with all life-cycle stages and intact communities,

b) Extensive low-disturbance habitats connected to the surrounding environment for persistent populations of grey seal (*Halichoerus grypus*), common seal (*Phoca vitulina*), twaite shad (*Alosa fallax*), sea lamprey (*Petromyzon marinus*), and river lamprey (*Lampetra fluviatilis*).

c) Low-disturbance foraging, resting and moultng areas for breeding and migrating bird species typical of the mudflats such as the pied avocet (*Recurvirostra avosetta*), dunlin (*Calidris alpina*), bar-tailed godwit (*Limosa lapponica*), eurasian curlew (*Numenius arquata*), and common shelduck (*Tadorna tadorna*).

5. Special conservation objectives for habitats and species of the salt meadows

a) Natural and semi-natural salt meadows (1330) and lagoons situated in them (1150) with varied structures, natural dynamic processes and persistent populations of typical species. This implies:

aa) natural processes of erosion, sedimentation and tidal inlet formation,

bb) regular flooding with unpolluted sea water,

cc) natural relief, salinity and water regime,

dd) natural development of vegetation in most areas,

e) selected partial areas with special communities found on extensively grazed or mown salt meadows.

b) Low-disturbance breeding and resting areas for breeding and migrating bird species typical of the salt meadows such as the redshank (*Tringa tetanus*), oystercatcher (*Haematopus ostralegus*), brent goose (*Branta bernicla*), and shorelark (*Eremophila alpestris*). This includes the absence of non-naturally occurring predators.

6. Special conservation objectives for habitats and species of the beaches and dunes

a) Salicornia and other annuals colonising mud and sand (1310), lagoons (1150), embryonic shifting dunes (2110), shifting dunes along the shoreline with *Ammophila arenaria* (“white dunes”) (2120), fixed coastal dunes with herbaceous vegetation (“grey dunes”) (2130), decalcified dunes with *Empetrum nigrum* (2140) and *Calluno-Ulicetea* (2150), dunes with *Hippophaë rhamnoides* (2160), dunes with *Salix repens ssp argentea* (*Salicion arenariae*) (2170), and wooded dunes of the Atlantic, Continental and Boreal region (2180) with varied structures, natural dynamic processes and persistent populations of typical species. This implies:

aa) natural processes of calcareous and decalcified sand being swirled up and removed,

bb) full zoning of typical vegetation with earlier- and later-life stages including open sandy patches,
cc) semi-natural lagoons and small pond-like bodies of water temporarily connected to the sea,

dd) constant development of new beach, dune and lagoon pioneer phases,

ee) balanced distribution of prevailing wood-free stages as well as scrubs and small wooded areas,

ff) absence or, at most, minor presence of introduced tree species and other neophytes.

b) Low-disturbance breeding and resting areas for breeding and migrating bird species typical of the beaches and dunes, such as the Kentish plover (Charadrius alexandrinus), little tern (Sterna albifrons), Eurasian curlew (Numenius arquata), common eider (Somateria molissima), common shelduck (Tadorna tadorna), and wheatear (Oenanthe oenanthe). This includes suitable vegetation and soil structures such as sparsely vegetated shell banks and the absence of non-naturally occurring predators.

7. Special conservation objectives for habitats and species of the wet dune slacks

a) Humid-to-wet dune slacks (2190) and fringe areas including semi-natural birch and alder forests on these sites (2180), with varied structures, natural dynamic processes and persistent populations of typical species. This implies:

aa) sufficient elements of all natural development stages with their characteristic habitat and vegetation types such as saline initial stages, small ponds, calcareous and decalcified small sedge fens, wet heaths rich in peat moss, reeds and willow bushes,

bb) constant development of new dune slacks with natural water regime and natural influence of wind and floods,

cc) balanced distribution of prevailing wood-free, short grassland and tall-growing stages as well as scrubs and small wooded areas,

dd) absence or, at best, minor presence of introduced tree species and other neophytes.

b) Stable or increasing populations of fen orchid (Liparis loeselii) in wet calcareous dune slacks and fringe areas.

c) Low-disturbance breeding areas for breeding bird species typical of the humid dune slacks such as the short-eared owl (Asio flammeus), hen harrier (Circus cyaneus) and marsh harrier (Circus aeroginosus). This includes suitable vegetation structures such as the common reed (Phragmites australis) and the absence of non-naturally occurring predators.

8. Special conservation objectives for habitats and species of the grassland areas

a) Low-disturbance breeding and resting areas for breeding and migrating bird species typical of the grassland areas, such as the blacktailed godwit (Limosa limosa), redshank (Tringa totanus) and white-fronted goose (Anser albifrons). This implies:
aa) high water levels on the humid grassland situated on the landward side of the dike,

bb) varied structures with uneven surfaces and small bodies of water,

c) low to medium-level nutrient supply,

dd) targeted maintenance through extensive grazing or mowing,

ee) the absence of non-naturally occurring predators,

ff) suitability as non disturbed, high-tide roosts for wading and water birds.

9. Special conservation objectives for habitats and species of the standing bodies of water

a) Semi-natural pools, ponds and lakes, especially within the dike-enclosed grassland areas, some featuring mesotrophic waters and vegetation of the *Littorelletea uniflorae* and *Isoeto-Nanojuncetea* (3130), and some with eutrophic waters and *Magnopotamion* or *Hydrocharition*-type vegetation (3150).

b) Low-disturbance water and reed areas as habitats for breeding birds such as the bittern (*Botaurus stellaris*), northern shoveler (*Anas clypeata*), marsh harrier (*Circus aeroginosus*), bluethroat (*Luscinia svecica*) and sedge warbler (*Acrocephalus schoenobaenus*) and as resting areas for wading and water birds, especially at high tide.

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Annex 12

The Protection of Nature Act


Part I

Purpose

1.-(1) The purpose of this Act shall be to contribute to safeguarding nature and the environment in Denmark, thus ensuring social development on a sustainable basis in respect of human conditions of life and for the conservation of flora and fauna.

(2) The purposes of this Act shall be, in particular

1) to protect nature, with its population of wild fauna and flora and their habitats as well as its landscape, heritage, natural-science and educational values,

2) to improve, restore or establish areas of significance to wild fauna and flora and for landscape and heritage interests, and

3) to provide public access to nature as well as to improve the opportunities for outdoor activities.

(3) In the administration of this Act, importance shall be attached to location when considering the significance of an area to the public.

2. The powers provided by this Act shall also be used to prevent the drifting of sand and increase the forest area, as well as to restore wetlands to contribute to improving the aquatic environment.

Part 2

General protection provisions

Protected natural habitats etc.

Lakes, watercourses, heaths, bogs, salt meadows, swamps, freshwater marshes, grasslands etc.

3.-(1) It shall be prohibited to alter the condition of natural lakes of more than 100 m², or of watercourses or parts of watercourses that have been designated as protected watercourses by the Minister for the Environment on the recommendation of the municipal council. This prohibition, however, shall not apply to any ordinary maintenance work in watercourses.

(2) It shall be prohibited to alter the condition of

1) heaths,
2) bogs and similar,
3) salt meadows and swamps as well as
4) freshwater marshes and biological grasslands,

when such natural habitats total more than 2,500 m² either separately, jointly or in connection with the lakes mentioned in subsection (1).

(3) It shall also be prohibited to alter the condition of bogs and similar of less than 2,500 m² when they are an extension of a lake or watercourse protected under subsection (1).

While this translation was carried out by a professional translation agency, the text is to be regarded as an unofficial translation based on the latest official Act no. 933 of 24 September 2009. Only the Danish document has legal validity.

December 2012, GlobalDenmark Translations

(4) The Minister for the Environment may lay down regulations on the application of fertilizers on areas protected under subsections (2) and (3), including regulations on the amount of fertilizers that may be applied on such areas, and prohibition of fertilizers.

4. (Repealed).

Other provisions

5.-(1) The Minister for the Environment may lay down regulations to the effect that the provisions in section 3(1)-(3) shall not apply to specific categories of the natural habitats in question.

(2) The Minister for the Environment may lay down regulations to the effect that section 3(1)-(3) shall not apply to dykes, groynes, breakwaters and other structures that require a licence in accordance with the Protection of Coasts Act (“lov om kystbeskyttelse”).

6. The Minister for the Environment may lay down regulations for the purpose of defining and delimiting the natural habitats mentioned in section 3(1)-(3). The Minister may also lay down regulations on the calculation of area size for the natural habitats mentioned in section 3(1)-(3), and regulations requiring natural lakes, which are wholly or partly owned by the state, or specific types of such lakes, to be covered by the regulations in section 3(1) notwithstanding their size.

7. The Minister for the Environment may lay down regulations on registration of the natural habitats mentioned in section 3(1)-(3).

Dune conservation areas

8.- (1) It shall be prohibited to alter the condition of dune conservation areas. Such areas shall not be fenced and no grazing shall be allowed. It shall also be prohibited to place caravans and similar in such areas. Furthermore, subdivision, land registration or transfer of part of a property whereby new boundaries are established, shall be prohibited.

(2) The following areas shall be designated as dune conservation areas:

1) The beach along Skagerrak and the North Sea,
2) the area between the sand dune conservation boundary and the beaches mentioned in no. 1,
3) sand dune conservation areas pursuant to previous legislation on the prevention of sand drifts, and
4) sand dune conservation areas pursuant to a decision by the Minister, cf. section 9.

(3) The sand dune conservation boundary shall be laid down pursuant to provision by the Minister for the Environment according to the regulations hitherto in force.

(4) The sand dune conservation boundary shall be registered in the Cadastre and listed in the Land Registry.

(5) The prohibition referred to in subsection (1) shall not apply to

1) measures to prevent sand drifts carried out pursuant to section 53,
2) agricultural operations, including grazing, in areas which have been lawfully used previously for agricultural purposes, except for afforestation,
3) ordinary fencing of the areas mentioned in no. 2,
4) reforestation of forests and planting in existing gardens,
5) harbour installations and the land areas designated for harbour purposes in a local development plan,
6) minor maintenance work on buildings, including replacing windows and roofs etc., if the height of the building is not increased or is only increased to an insignificant extent, and
7) construction work, which is necessary for commercial purposes for the operation of the relevant property as agricultural or forestry property or for fisheries, and which is erected close to existing buildings. However, a licence from the Minister for the Environment shall be required in respect of the specified location and external design of the buildings mentioned.

(6) The Minister for the Environment may lay down regulations to the effect that subsection (1) shall not apply to specific types of structures also extended to the territorial waters. The same shall apply correspondingly to dykes, groynes, breakwaters and other installations that require a licence under the Protection of Coasts Act (“lov om kystbeskyttelse”).

(7) The Minister for the Environment may lay down regulations on the use of sand dune conservation areas, including a prohibition on certain methods of use.
9.-(1) The Minister for the Environment may include further sand dune conservation areas provided that such areas are located within 500 meters of the innermost boundary of the beaches mentioned in section 8(2), no. 1.

(2) The Minister for the Environment may, upon request by the owner, include other sand dune conservation areas than those mentioned in subsection (1) and in section 8(2), or if the owner fails to comply with an order pursuant to section 53(2) on preventing the drifting of sand or on restrictions in the use of the areas.

(3) The Minister for the Environment may, in special cases, revoke sand dune conservation restrictions.

10. (Repealed).

11.-(1) To prevent the drifting of sand, the Minister for the Environment may issue orders concerning the use of sand dune conservation areas as well as prohibit certain types of use.

(2) The Minister for the Environment may close roads and paths in sand dune conservation areas provided that there is another means of road access to the property concerned.

(3) It shall be prohibited to grant access to new properties by means of roads that cross over sand dune conservation areas.

12.-14a (Repealed).

Protection lines

Protection of coastal areas

15.-(1) It shall be prohibited to alter the condition of beaches or other areas located between the beach and the beach protection line. It shall be prohibited to erect fences and to place caravans or similar in such areas, and subdivision, land registration or transfer of part of a property whereby a boundary is created, shall be prohibited.

(2) The beach protection line shall be laid down by the Minister for the Environment according to the regulations hitherto in force.

(3) The beach protection line shall be registered in the Cadastre and listed in the Land Registry.

(4) The prohibition referred to in subsection (1) shall not apply to:

   1) agricultural operations except for afforestation,
   2) reafforestation of forests and planting in existing gardens,
   3) traditional fencing on agricultural properties,
   4) existing military installations for defence purposes,
   5) harbour installations and the land areas designated for harbour purposes in a local development plan,
   6) minor maintenance work on buildings, including replacing windows and roofs etc., if the height of the building is not increased or is only increased to an insignificant extent,
   7) construction work, which is necessary for commercial purposes for the operation of the relevant property as agricultural or forestry property or for fisheries, and which is erected close to existing buildings. However, a licence from the Minister for the Environment shall be required in respect of the specific location and external design of the buildings mentioned, and
   8) stretches of coast that are dune conservation areas, cf. sections 8 and 9.

(5) The Minister for the Environment may lay down regulations to the effect that subsection (1) shall not apply to specific types of structures also extended to the territorial waters. The same shall apply correspondingly to dykes, groynes, breakwaters and other installations that require a licence under the Protection of Coasts Act ("lov om kystbeskyttelse").

15a-d. (Repealed).

Lakes and rivers

16.-(1) It shall be prohibited to place buildings, caravans and similar or to plant or alter the terrain within 150 meters from lakes with a surface area of at least 3 hectares and from the watercourses that are registered as having a protection line in accordance with previous legislation.

(2) The prohibition referred to in subsection (1) shall not apply to:

   1) measures that have been ordered or licensed under the Watercourse Act,
2) reforestation of forests and planting in existing gardens,
3) existing military installations,
4) harbour installations and the land areas designated for harbour purposes in a local development plan,
5) production buildings necessary for agriculture and the fishing industry, and
6) other areas which were exempted under previous legislation.

**Forests**

17.-(1) It shall be prohibited to place buildings, caravans and similar within 300 meters of forests. For privately owned forests, this shall only apply if the area comprises at least 20 hectares of continuous forest.

(2) The prohibition referred to in subsection (1) shall not apply to

1) existing military installations,
2) harbour installations and the land areas designated for harbour purposes in a local development plan,
3) production buildings necessary for agriculture and the fishing industry, and
4) other areas which were exempted under previous legislation.

**Ancient monuments**

18.-(1) It shall be prohibited to alter the condition of the area within 100 meters of an ancient monument protected by the provisions laid down in the Museums Act (“museumsloven”). It shall also be prohibited to erect fences, and to place caravans and similar here.

(2) The prohibition referred to in subsection (1) shall not apply to

1) agricultural operations, except for afforestation,
2) reforestation of forests located outside the area covered by the Museums Act, and planting in existing gardens, and
3) traditional fencing on agricultural properties.

(3) Subsection (1) shall not apply to ancient monuments not visible in the terrain, as well as the ancient monuments mentioned in Annex 1 to this Act.

**Churches**

19. It shall be prohibited to erect buildings more than 8.5 meters tall within 300 meters of a church, unless the church is surrounded by urban settlement in the entire protection zone.

**Part 2a**

*International nature conservation sites*

**Preservation measures etc.**

19a. The municipal council shall initiate the measures laid down in the action plan on implementation of the Natura 2000 plan pursuant to the Environmental Targets etc. Act (“lov om miljømål m.v.”) for bodies of water and international nature conservation sites.

19b.-(1) In international nature conservation sites, before launching the activities mentioned in Annex 2 to this Act, written notification in this respect shall be provided to the municipal council with a view to assessing the impacts on the area taking into account the conservation goals for the area.

(2) Subsection (1) shall not apply to wooded, forest reserves.

(3) An activity covered by the prohibitions in section 3, section 8, section 15 or section 18, or in section 28 of the Forests Act (“lov om skove”) shall not be covered by subsection (1). The same shall apply to activities which otherwise require a licence under legislation on nature protection, the environment, or spatial planning, or if the consequences pursuant to this Act are assessed or shall be assessed prior to implementation.

(4) The activity may be initiated if the municipal council no later than four weeks after receipt of notification, has decided to make further assessments of the activity. This decision shall, however, apply for six months as a maximum but may, in special cases, be
prolonged. In respect of timely appeals on a decision under the 1st clause, the time limit in the 2nd clause shall be from the time at which the Nature Protection Board of Appeal has made a decision in the appeals case.

(5) If the activity has not been initiated three years at the latest after the notification, a new notification under subsection (1) shall be given in order to initiate it.

(6) The Minister for the Environment may lay down more detailed regulations on the assessments of the municipal council of notifications under subsection (1).

19c.-(1) The municipal council may enter into agreements with the owner or user of a property in international nature conservation sites on the operation or other measures to realise the Natura 2000 plan.

(2) An agreement pursuant to subsection (1) may be changed if the parties so agree and if the change is not in contravention of the conservation goals laid down in the Natura 2000 plan.

(3) An agreement pursuant to subsection (1) may comprise other areas the use of which may contribute to compliance with the Natura 2000 plan.

19d.-(1) The municipal council shall order the owner of a property in or outside international nature conservation sites to carry out the operation or other measures necessary to realise the Natura 2000 plan, if no agreement on reasonable terms can be made pursuant to section 19c or in the event of failure to comply with an agreement already entered into.

(2) By a decision under subsection (1), the prohibitions in sections 3 and 15-19 may be determined not to apply if the condition is regulated by the decision. Furthermore, in accordance with the Planning Act ("planloven") and the Watercourse Act ("vandløbsloven"), it may be decided that licences, approvals etc. necessary for implementation of the measures ordered be considered granted in connection with a decision pursuant to subsection (1).

(3) A decision pursuant to subsection (1) shall indicate the extent to which it replaces a licence etc. pursuant to the regulations of this Act, the Planning Act or the Watercourse Act.

19e.-(1) The municipal council shall, in special cases, order the owner of a property in or outside international nature conservation sites to carry out the operation or other measures necessary to meet the conservation goal of the Natura 2000 plan, to prevent permanent degradation of natural habitats or habitats for species or significant disruption of species to which the area is designated, if it is not possible to prevent this with measures on the basis of the Natura 2000 plan. The municipal council may also stipulate that appeals made in due time are not to have a stay of execution.

(2) For decisions under subsection (1), the regulations in section 19d(2) and (3) shall apply correspondingly.

(3) A decision under subsection (1) shall apply until replaced by an agreement under section 19c or a decision under 19d, however, for six months as a maximum, but may be extended, in special cases.

19f.-(1) Until a final adopted Natura 2000 plan is available, the municipal council shall order the owner of a property in or outside international nature conservation sites to carry out the operation or other measures necessary to prevent degradation of natural habitats and habitats for species or significant disruption of species to which the area is designated, if adoption of the Natura 2000 plan may not be awaited, and if such degradation or disruption may not be averted through agreement or in any other way.

(2) For decisions under subsection (1), the regulations in section 19d(2) and (3) shall apply correspondingly.

(3) A decision under subsection (1) shall apply until replaced by an agreement under section 19c or a decision under section 19d, however, no later than one year after adoption of the Natura 2000 plan.

Compensation

19g.-(1) For losses inflicted on an owner, user or holder of other rights to the property by a decision under section 19b or sections 19d-19f, compensation shall be awarded.

(2) The issue of any compensation as a consequence of a decision under section 19e shall be determined in connection with an agreement under section 19c or a final decision under section 19d.

(3) For decisions on compensation, the regulations in section 39(1), (2) and (4), section 43, section 44(1), (3) and (4), section 45, section 47 and section 49(2) shall apply correspondingly with the necessary modifications, as the municipal council shall take the place of the Nature Conservancy Board.
19b.(1) Within the frameworks of the appropriations allocated in annual finance acts, upon application, a grant may be made to the municipal council from the government to cover expenses, with a deduction of any co-financing by others, as a consequence of the municipal council’s conclusion of agreements under section 19c and decisions under section 19b or sections 19d-19f.

(2) If the municipal council concludes agreements or makes decisions as mentioned in subsection (1) without a commitment from the government regarding a grant, the expenses shall be paid by the municipal council.

(3) The Minister for the Environment may lay down more detailed regulations and guidelines on grants.

Part 3
Structures in the countryside

Public structures

20.(1) Public structures in the countryside shall be located and designed such that, as far as possible, consideration is given to landscape values and the other interests mentioned in section 1.

(2) The Minister for the Environment may lay down regulations to the effect that the Minister for the Environment or the municipal council shall approve the location and design of specific categories of public structures.

Outdoor advertisements

21.(1) It shall be prohibited to place posters, pictures, free-standing signs, lighting advertising and other arrangements for the purpose of advertising or publicity in the countryside.

(2) The prohibition in subsection (1) shall not apply to:

1) enterprise advertisements placed close to the enterprise, if they do not dominate the landscape and if they are not visible over long distances,
2) signs for enterprises and for sale of commercial properties etc. erected in an area designated as commercial area in a local development plan, notwithstanding that the area has not been developed. Further regulations in this respect shall be determined by the Minister for the Environment,
3) road safety campaigns approved by the Danish Road Safety Council,
4) posters put up in connection with an election to the Folketinget (the Danish parliament), or to municipal or other public councils or referenda, and
5) small informational signs concerning trade or an enterprise erected on the property concerned or at the driveway to the property concerned from the closest public road or private common road. Further regulations in this respect shall be determined by the Minister for the Environment.

(3) The municipal council may permit advertisements to be erected on sports facilities.

Part 4
Public access to nature

Beaches

22.(1) Beaches and other stretches of coast between the daily low-water line and areas with continuous land vegetation not dominated by salt bearing plants or other beach vegetation shall be open for passage on foot, brief visits and bathing. Access shall be at people’s own risk. It shall be permitted to leave a boat without motor on the beach for a short period of time. Dogs shall be on a leash from 1 April to 30 September. Dogs shall always be on a leash when close to grazing livestock. In the period from 1 September to 31 May horse-back riding shall be permitted on bare beaches and directly down to this beach if there is legal access to the beach.

(2) The regulation in subsection (1) shall not cover areas which, before 1 January 1916 have been designated as garden or included in a commercial enterprise operated on the property. The same shall apply to military installations and harbour installations.

(3) Public access may not be prevented or obstructed.

(4) It shall be prohibited to bathe and be within 50 meters of a residential building on privately owned beaches and stretches of coast.
23.- (1) Forests shall be open for passage on foot and bicycle and for brief visits if there is a legal means of access thereto. This shall not, however, apply to forests that are sign-posted as military installations. Access shall be at people’s own risk. Dogs shall be on a leash.

(2) Public access may not be prevented or obstructed. It shall also be prohibited to erect untraditional fences around forests.

(3) The owner may prohibit access on days at which hunting is taking place, or to areas in which intensive felling is taking place.

(4) Anyone who passes through a forest in another way than permitted shall state their name and address upon request from the owner of the forest or from a representative of the owner.

(5) In privately owned forests, passage on foot or by bike shall only be permitted on paths and roads. Access shall only be permitted between 6 a.m. to sunset, and it shall be prohibited to be within 150 meters of residential and production buildings.

(6) In privately owned forests of less than 5 hectares, the owner may restrict public access by sign-posting in accordance with the restrictions on public access laid down in section 17 of the Regulation of Trespassing Act (“mark- og vejfredsloven”).

(7) The regulations in subsections (5) and (6) shall not apply to forests owned by public foundations.

(8) The owner may through sign-posting lay down restrictions on cycling on paths where cycling poses special problems. The municipal council, and for state-owned areas the Minister for the Environment, may wholly or partly disregard such prohibition.

(9) Horse-back riding on private common roads passing through forests shall be permitted, unless the owner through sign-posting in accordance with section 17 of the Regulation of Trespassing Act has wholly or partly prohibited horse-back riding. The municipal council, and for state-owned areas the Minister for the Environment, may, in special cases, wholly or partly disregard such prohibition.

(10) The regulations in section 26a shall also apply to roads and paths in forests which provide access to the other road systems in the forest.

24.- (1) Uncultivated areas shall be open for passage on foot and for visits if there is a lawful means of access. Access shall be at people’s own risk. Dogs shall be on a leash.

(2) The owner may prohibit access on days at which hunting is taking place, or to areas in which intensive agricultural operations are taking place.

(3) Access to privately owned uncultivated areas shall only be permitted from 6 a.m. to sunset. It shall be prohibited to be within 150 meters of residential and production buildings.

(4) The provision in subsection (1), 1st clause shall not apply to privately owned areas which are properly enclosed as a whole. This provision shall not apply to the protected zones along watercourses and lakes which, under the Watercourse Act, shall remain uncultivated, unless they are adjacent to areas that are open to public access.

(5) There shall, however, be access to enclosed, uncultivated areas with no grazing livestock, through gates and over stiles or similar, if no sign-posts have been erected which wholly or partly prohibit this passage. The owner may erect such sign-posts if the passage disturbs the commercial use of the property, if it is a severe invasion of privacy or if flora and fauna need to be protected. If fencing or sign-posting is not reasonably justified, the municipal council may order the fencing or sign-posting to be removed or order gates, stiles or similar to be installed, or sign-posting about the possibility of access to be installed.

25.- (1) Dune conservation areas, cf. sections 8 and 9, shall be open to passage on foot and brief visits, if there is a lawful means of access. Access shall be at people’s own risk. Dogs shall be on a leash. The access to bring unleashed dogs and for horse-back riding pursuant to section 22(1) shall also apply to bare dune conservation beaches.

(2) The provision in subsection (1) shall not apply to areas cultivated for agriculture.
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(3) In privately owned dune conservation areas, it shall be prohibited to be within 50 meters of residential buildings.

Roads and paths

26.-(1) Access to passage on roads and paths in the countryside may, in respect of passage on foot or by bike, be wholly or partly prohibited by the owner, through sign-posting, according to the provisions in section 17 of the Regulation of Trespassing Act ("mark- og vejfredsloven"), if such passage disrupts the commercial use of the property, if it is a severe invasion of privacy or if flora and fauna need to be protected. Access shall be at people’s own risk.

(2) The owner may also prohibit cycling on paths where cycling poses special problems, and passage on private driveways and paths on days on which hunting is taking place or when passage may be hazardous because of intensive agricultural operations.

(3) The municipal council may wholly or partly disregard a prohibition on passage on foot or by bike, and in special cases, on horse-back riding on private common thoroughfares.

26a.-(1) Closure of thoroughfares and paths, closure of roads and paths which otherwise lead to the natural habitats covered by sections 22-25, and closure of roads and paths leading to special viewpoints, historical monuments and similar, may only take place four weeks after written notification from the owner to the municipal council.

(2) If the municipal council fails to make a decision no later than four weeks after receipt of the notification on whether to make further assessments of the recreational significance of the road or path, the road or path may be closed. This decision shall, however, apply for six months as a maximum but may be prolonged in special cases. In respect of timely appeals on a decision under the 1st clause, the time limit in the 2nd clause shall be from the time at which the Nature Protection Board of Appeal has made a decision in the appeals case.

(3) The municipal council may make a decision to the effect that the road or path shall not be closed if the road or path has significant recreational significance and if no satisfactory alternative access exists or is established.

(4) If closure of the road or path has not been commenced no later than three years after the notification, a new notification under subsection (1) shall be given before the road or path may be closed.

(5) Subsections (1)-(4) shall not apply if the owner can prove that the road or path has been established only as part of an agreement on promoting public access.

Other provisions

27.-(1) In special circumstances, the municipal council, and for state-owned areas the Minister for the Environment, may decide that areas covered by sections 22-26 be wholly or partly closed for public access.

(2) The Minister for the Environment may prohibit public access to dune conservation areas if there is a danger of sand drifts.

(3) The Minister for the Environment may lay down regulations on public access to areas covered by sections 22-26.

(4) The Minister for the Environment may lay down regulations to the effect that the public be entitled to more extensive access to state-owned areas than that mentioned in sections 22-26. The Minister may, furthermore, lay down regulations to the effect that the public shall be entitled to more extensive access to forests owned by municipalities, the Danish church or public foundations than that mentioned in section 23. Regulations may be laid down that make more extensive access contingent on payment of a fee.

(5) The Minister for the Environment may lay down regulations on the liability for damage as a result of public access to private forests, uncultivated areas, roads and paths.

Waste

28.-(1) It shall be prohibited to dump or deposit waste and similar on a property without the owner’s permission.

Navigation

29.-(1) The Minister for the Environment may lay down regulations to the effect that non-commercial navigation and other traffic in territorial waters and, at the request of the municipal councils concerned, on watercourses and lakes, shall be prohibited wholly or partly.
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(2) The Minister for the Environment may lay down regulations on public navigation and other traffic on lakes owned by the government.

Part 5

Protection of plant and animal species etc.

29a. The animal species mentioned in Annex 3 to this Act may not be intentionally disturbed, with harmful impact on the species or population. This prohibition shall apply to all life stages of the animal species covered.

(2) Breeding or resting areas for the species mentioned in Annex 3 to this Act may not be damaged or destroyed.

29b. The Minister for the Environment may prepare management plans and launch other initiatives, including the provision of grants, with a view to conservation of the species or populations mentioned in Annex 3 to this Act.

30.- (1) The Minister for the Environment shall lay down regulations for the purpose of protecting or regulating the exploitation of wild animal and plant species, including regulations on conservation, registration and marking of such species and parts and products thereof. Regulations may be laid down to the effect that the Minister, without a court order, may have specimen samples of certain wild species taken. The regulations may apply to species from Denmark as well as from abroad.

(2) The Minister for the Environment shall take conservation measures as required to ensure against significant negative impacts in relation to the conservation status of the species mentioned in Annex 3 to this Act if caught or killed unintentionally. The conservation measures shall be taken on the basis of monitoring or further surveys.

(3) The Minister for the Environment shall take the measures necessary to ensure that collection in nature of specimens of the wild animal and plant species mentioned in Annex 4 to this Act, as well as exploitation thereof is compatible with the consideration for conservation of such species.

(4) The Minister for the Environment shall lay down regulations implementing the measures mentioned in subsections (2) and (3).

(5) The Minister for the Environment may determine that anyone who exploits wild animal and plant species for commercial purposes shall have authorisation for this purpose. The Minister for the Environment may lay down regulations on the authorisation scheme, including regulations stipulating that authorisation may be denied or revoked.

(6) The Minister for the Environment may lay down regulations on supervision with or prohibition of import of specific species of animals living in the wild which are of risk to humans.

31.- (1) It shall be prohibited to release animals that do not occur naturally in the wild in Denmark without a permit from the Minister for the Environment. This shall also apply to territorial waters and the fishing zone as laid down by the Fishing Zone of the Kingdom of Denmark Act (“lov om Danmarks Riges fisketerritorium”).

(2) The Minister for the Environment shall examine the appropriateness of reintroducing the animal and plant species mentioned in Annexes 3 and 5 to this Act, and which are native species, if this contributes to their conservation.

(3) In order to safeguard nature, the Minister for the Environment shall lay down regulations on the release of certain animals which do not occur naturally in Denmark.

(4) In order to safeguard nature the Minister for the Environment shall lay down regulations to the effect that certain plants which do not occur naturally in Denmark be required a special licence to be planted or sown.

32. From 1 March to 31 October, reed cutting may only take place upon licence from the Minister for the Environment.

Part 6

Nature conservation

Overview

33.- (1) With a view to managing the purposes mentioned in section 1, the Nature Conservancy Board may decide to conserve areas of land and fresh waters pursuant to the regulations in this Part.
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(2) Pursuant to the regulations in section 43, decisions by the Nature Conservancy Board on conservation orders may be brought before the Nature Protection Board of Appeal. Pursuant to the regulations in section 45, the decision by the Nature Protection Board of Appeal on compensation may be brought before the Valuation Commission.

(3) The Minister for the Environment, the municipal council or the Danish Society for Conservation of Nature may raise conservation orders.

(4) On request, the Minister for the Environment shall assist the nature conservancy board, the Nature Protection Board of Appeal and the Valuation Commission during processing by these authorities of cases pursuant to this Part.

(5) Compensation shall be awarded pursuant to the provisions in section 39 for losses imposed on an owner, user or holder of other rights to a conserved property.

Preliminary prohibition

34.-(1) The Minister for the Environment or the municipal council may prohibit the use of a property, or the establishment, in law or in fact, of conditions in contravention of an intended conservation order.

(2) The prohibition shall be communicated to the affected owners, and registered in the Land Registry for the properties concerned, and it shall be announced publicly.

(3) This prohibition shall apply from its publication and until a proposed conservation order has been announced publicly, cf. section 37, though not for more than one year.

Nature conservancy boards

35.-(1) The Minister for the Environment shall establish two or three nature conservancy boards in each region.

(2) The Minister for the Environment shall determine the geographical area for each nature conservancy board.

(3) A nature conservancy board shall comprise:

1) a chairperson, who shall be a judge, and who shall be appointed by the Minister for the Environment,
2) a member appointed by the Minister for the Environment, and
3) a member elected by the municipal council of the municipality in which the area concerned is located.

(4) In parallel with appointment and election of members, a proxy shall be appointed and elected for each member. The proxy for the chairperson shall be a judge.

(5) The chairperson, the proxy and the member selected by the Minister shall be appointed for a period determined by the Minister for the Environment. The member appointed by the municipal council shall be elected for the municipal election period.

(6) Until such time that a new nature conservancy board has been established after a municipal election, the board shall be maintained with its existing composition. The Minister for the Environment may also permit the board to conclude processing of a pending case.

(7) If a conservation order relates to an area which falls within several nature conservancy boards, the Minister for the Environment shall refer the case to one of the nature conservancy boards. This board shall then be joined by the members appointed by the Minister and members of the other boards appointed by the municipal council.

(8) The Minister for the Environment may determine that the proxy to the chairperson shall exercise the powers conferred on the chairperson during the board’s consideration of a proposed conservation order, even though the chairperson is not unable to participate in the case.

(9) The Minister for the Environment may decide that the powers as chairperson during the board’s processing of a proposed conservation order shall be exercised by the chairperson of another nature conservancy board in the region or by his proxy, even though the chairperson is not unable to participate in the case.

(10) The Minister for the Environment shall lay down rules of procedure for the nature conservancy boards.

(11) Remuneration etc. for the board chairpersons shall be paid by the state. The state shall pay the expenses related to the secretariats of the nature conservancy boards. Subsistence allowance, compensation for documented loss of income from employment and travel allowances, etc. shall be paid to the members mentioned in subsection (3), nos. 2 and 3, in accordance with
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the regulations in the Local Government Act (“lov om kommunernes styrelse”). The expenses shall be paid by the municipality(ies) for which the conservation order concern(s). The Nature Conservancy Board shall make decisions on distribution of expenses to the member appointed by the Minister.

Processing of conservation orders

36.-(1) A conservation order shall be raised in connection with submission of a proposal for a conservation order to the Nature Conservancy Board. The proposal shall include conservation orders for a specified area, information about the registration designation for the properties covered by the proposal, as well as a report on the basis for the proposal.

(2) Proposals for a conservation order in and outside international nature conservation sites shall contribute to compliance with Denmark’s international obligations within these areas.

(3) Proposals for a conservation order covering areas within international nature conservation sites shall include a report on how the conservation order will contribute to compliance with Denmark’s international obligations within these areas.

(4) Proposals for a conservation order outside international nature conservation sites shall give an account of how this conservation order will not deteriorate natural habitats and habitats for species, or disrupt species within an international nature conservation site for which the area is designated.

(5) Proposals for a conservation order shall include a budget proposal which accounts for expected costs in connection with implementation of the proposal.

(6) The applicant shall submit the budget proposal for a statement from the authorities which may raise a conservation order, cf. section 33(3). The statements which shall be given no later than four weeks after receipt of the estimate shall be submitted to the Nature Conservancy Board together with the proposal for a conservation order.

37.-(1) The Nature Conservancy Board shall publish the raising of the conservation order and submit the proposal for a conservation order to the owners and users of the properties covered by the proposal, to government and municipal authorities the interests of which are affected by the proposal as well as to organisations etc. which are assumed to have a significant interest in the proposal.

(2) After publication no action in contravention of the proposed conservation order may be taken.

(3) Proposals for conservation orders which involve intervention in current operation or utilisation of a property, shall not take effect, however, until a final decision has been taken to carry out the conservation order, unless the proposed conservation order states that the provisions shall take legal effect whilst the conservation order is pending.

(4) Whilst the conservation order is pending, the Nature Conservancy Board may decide to abolish legal effects of proposals for conservation orders if such are not considered necessary to satisfy the purpose of the conservation.

(5) During processing of a conservation order, the Nature Conservancy Board shall hold at least one public meeting about the case. The Nature Conservancy Board shall announce the meeting in the same way as the raising of the case was announced.

(6) For a meeting as mentioned in subsection (5), the Nature Conservancy Board shall, as a minimum, invite the parties mentioned in subsection (1) as well as the parties who have made a request to the Nature Conservancy Board for an invitation to meetings in the case.

(7) Objections against or amendments to a proposal for a conservation order as well as claims for compensation in the event of conservation shall be submitted during a meeting or in writing to the Nature Conservancy Board.

37a.-(1) A proposal for a conservation order shall lapse if the Nature Conservancy Board has not made a decision pursuant to section 40(1) two years after raising of a conservation order.

(2) A conservation order which has lapsed, may, within two months after its lapse, be reintroduced on an unchanged basis according to the regulations in section 36 and shall then be processed according to the regulations in this Part.

(3) In special cases, the Nature Conservancy Board may, before expiry of the time limit mentioned in subsection (1), decide to extend this time limit for up to two years.

Conservation orders
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38.(1) A conservation order shall include a provision on the purpose of the conservation order.

(2) In conservation orders covering areas within international nature conservation sites, the purpose shall clarify that the conservation order is to contribute to ensuring a favourable conservation status for species and natural habitats for which the areas are designated.

(3) A conservation order may involve conservation of the current condition or provision of a certain condition which shall then be preserved, and it may regulate public access to the area.

(4) A conservation order may include the provisions, including orders and prohibitions relating to the use of the areas, considered necessary to achieve the objectives of the conservation order.

(5) A conservation order may stipulate that real property or part of real property shall be surrendered to the public.

(6) A conservation order may determine that the prohibitions in section 3 and sections 15-19 shall not apply to the extent that the matter is regulated by the conservation order.

(7) A conservation order shall specify the extent to which it serves in lieu of a licence etc. pursuant to the regulations laid down in this Act, or to regulations in other legislation.

38a. A conservation order which involves implementation of a nature restoration project may only be carried out, if the authorities responsible for implementing the project and paying the costs in this connection, can recommend the conservation order.

Compensation etc.

39.(1) The Nature Conservancy Board shall determine the compensation to be awarded to owners, users and other holders of rights in the properties covered by the conservation order, for the loss attributable to the adoption of the conservation order. Compensation may only be awarded to other parties than owners and users if a claim for compensation is submitted in accordance with the regulations in section 37(7). Compensation for a conservation order of publicly owned areas shall not be awarded unless the property conserved is acquired with a view to temporary occupation.

(2) If the conservation orders are imposed on a public authority, the Nature Conservancy Board shall determine whether compensation shall be awarded and, if so, the amount to be awarded.

(3) If the conservation order is not adopted, or the proposal lapses pursuant to section 37a, the nature conservancy board may, upon request, award a private owner or user an indemnification for losses incurred due to not being able to use the property as previously during the time between the publication of the proposal for a conservation order and the decision not to adopt the conservation order.

(4) Interest shall be paid on compensation from the date of a decision by the nature conservancy board, and until the compensation is paid at an annual interest rate equal to the discount rate of Danmarks Nationalbank (the Danish central bank). In special circumstances, the nature conservancy board may determine a different starting date for calculating the interest.

Decisions by the nature conservancy board

40.(1) Processing by the nature conservancy board of a conservation order shall be concluded in a decision on whether to adopt the conservation order; in affirmative cases, the board shall determine the geographical area to which the conservation order shall apply, make specific conservation provisions for the area concerned, cf. section 38, and decide matters of compensation etc., cf. section 39.

(2) The nature conservancy board shall publish its decision and send notice of the decision to the parties to whom a copy of the proposal for a conservation order was sent, cf. section 37(1), as well as to any person who, during the processing of the case, appeared before the board or submitted a request to be notified of the decision.

(3) The nature conservancy board shall have the conservation order registered in the Land Registry in respect of the properties concerned.

41.(1) Upon publication pursuant to section 40(2), all persons shall comply with the conservation orders.

(2) If the nature conservancy board decides to reject the conservation order or to restrict the conservation area or conservation orders in respect of the proposal, the legal effect of the proposal shall be sustained in accordance with section 37(2) until the Nature Protection Board of Appeal has made a decision in this matter. If the Nature Protection Board of Appeal is not required under section
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42 to review the decision of the nature conservancy board, and the decision is not appealed under section 43(1), the proposal shall, however, cease to have legal effect upon expiry of the time limit for appeal under section 43(3).

(3) If property is surrendered as part of the adoption of the conservation order in accordance with section 38(5), all rights to the property surrendered shall lapse, unless otherwise decided by the board. If part of a property is surrendered, the authority to which the area is surrendered shall provide for subdivision or transfer of part of the property and pay the expenses in this connection.

Review by the Nature Protection Board of Appeal

42.-(1) If the total compensation and indemnification due as a result of the adoption of a conservation order exceed DKK 100,000, the Nature Protection Board of Appeal shall review the decision of the nature conservancy board pursuant to section 40(1), regardless of whether the decision is appealed.

Appeal to the Nature Protection Board of Appeal

43.-(1) The decision of the nature conservancy board pursuant to section 37(4), section 37a(3) and section 40 may be appealed to the Nature Protection Board of Appeal.

(2) The following shall have the right to appeal:

1) owners and users to whom a copy of the decision shall be sent,
2) any person who, during the processing of the case, appeared before the board or submitted a request to be notified of the decision,
3) government and municipal authorities the interests of which are affected by the proposal, and
4) organisations etc. that are assumed to have a substantial interest in the proposal.

The parts of the decision that concern compensation pursuant to section 39(1), or indemnification pursuant to section 39(3), may, however, only be appealed by a person who considers him/herself entitled to higher compensation or indemnification, or by an authority that shall pay part of the compensation.

(3) The regulation in section 87(1) shall also apply to appeals to the Nature Protection Board of Appeal.

(4) Appeals shall be submitted in writing to the Nature Protection Board of Appeal.

(5) In appeals to a decision made by the nature conservancy board pursuant to section 37(4), and section 37a(3), the Nature Protection Board of Appeal shall make a decision within eight weeks of receipt of the appeal.

43a. The temporary legal effects of a proposal for a conservation order, cf. section 41(2), shall lapse two years after the conservation order has been brought before the Nature Protection Board of Appeal.

Decision by the Nature Protection Board of Appeal

44.-(1) The Nature Protection Board of Appeal may amend the decision of the nature conservancy board, including the geographical scope of the conservation order, the conservation orders and the compensation. This shall apply regardless of who raised the conservation order or appealed the decision of the nature conservancy board, and regardless of the proposal for a conservation order and the proposals and claims submitted to the nature conservancy board and the Nature Protection Board of Appeal.

(2) If, contrary to the nature conservancy board, the Nature Protection Board of Appeal decides that a proposed conservation order should be adopted, the Nature Protection Board of Appeal may order the nature conservancy board to reconsider the case. The Nature Protection Board of Appeal may also determine that any increase in the extent of the protected area that has been decided by the Nature Protection Board of Appeal, shall be considered by the nature conservancy board.

(3) In special cases, the Nature Protection Board of Appeal may, instead of deciding a claim for compensation, refer the matter to the Valuation Commission for decision.

(4) The Nature Protection Board of Appeal shall publish its decision and send a copy of the decision to the owners and users concerned, as well as any other person who has submitted a request to be notified. The board shall have the provision of the conservation order registered in the Land Registry in respect of the properties concerned.

Valuation
45.-1 Decisions by the Nature Protection Board of Appeal on compensation may be appealed to the Valuation Commission mentioned in section 46. Decisions pursuant to section 39(1), 3rd clause, section 39(3) and section 49(3)-(5) may, however, not be appealed to the Valuation Commission.

(2) The following shall have the right to appeal:
1) owners and users etc. who have appealed the decision of the nature conservancy board on compensation, to the Nature Protection Board of Appeal, or for whom the Nature Protection Board of Appeal has tightened conservation orders or reduced the amount of compensation, and
2) an authority which shall pay part of the compensation.

(3) The regulation in section 87(1) shall also apply to appeals to the Valuation Commission.

(4) Appeals shall be submitted in writing to the Nature Protection Board of Appeal, which shall forward the appeal to the Valuation Commission together with the appealed decision and the material considered in the case.

The Valuation Commission

46.-1 The Minister for the Environment shall set up a Valuation Commission to consider appeals pursuant to section 45.

(2) The Valuation Commission shall comprise:
1) a chairperson who shall be a high court judge and who shall be appointed by the Minister for the Environment, and
2) two members who shall be appointed by the Minister for the Environment,

(3) A proxy shall be appointed or elected for each of the members pursuant to the regulations in subsection (2).

(4) All appointments and elections shall apply for four years. New elections during this period, however, shall only apply until the end of this period.


47. The nature conservancy board, the Nature Protection Board of Appeal and the Valuation Commission may determine that an owner or user be awarded suitable compensation for necessary expenses incurred for obtaining expert advice during the processing of the conservation order. A decision pursuant to the 1st clause may not be appealed.

Reconsideration of a case by the Nature Protection Board of Appeal

48. In special cases, the Nature Protection Board of Appeal may reconsider the decision to adopt a conservation order and its content and the area to which it applies when the Valuation Commission has decided the compensation due or when the matter is decided by a final judgement in a court of law, cf. section 88.

Payment and allocation of compensation

49.-1 The Minister for the Environment shall ensure payment of compensation and indemnification awarded. Compensation may not be claimed until a final decision has been made to adopt the conservation order, cf. section 48.

(2) If mortgages in property surrendered lapse, cf. section 41(3), compensation for property surrendered may only be paid to the owner with the consent of the mortgagee. This, however, shall not apply in cases where the nature conservancy board, the Nature Protection Board of Appeal or the Valuation Commission deem such property surrender not to reduce the mortgage collateral.

(3) The state shall pay three-quarters of the compensation and indemnification awarded. The last quarter shall be paid by the municipality concerned. If the area covered by the conservation order is located in several municipalities, the nature conservancy board or the Nature Protection Board of Appeal shall determine allocation of the expenditure.

(4) For conservation orders that are mainly of importance to one or more municipalities, the nature conservancy board or Nature Protection Board of Appeal may determine that the municipality(ies) concerned shall, wholly or partly, pay the part of the compensation incumbent on the state pursuant to subsection (3).

(5) For conservation orders of national importance and with expenditure of more than DKK 2 mill., the Nature Protection Board of Appeal may determine that the state shall pay nine-tenths of the compensation etc.

Exemption
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50.-(1) The Nature Conservancy Board may grant exemption from a proposed or adopted provision of a conservation order if the exemption is not in contravention of the purpose of the conservation order. The regulations in section 66 shall apply correspondingly.

(2) The nature conservancy board may only grant exemption from a conservation order or a proposed conservation order in or outside an international nature conservation site, if the conservation order applied for does not deteriorate natural habitats and habitats for species or significantly disrupts species for which the area is designated.

(3) Unless the conditions in section 65(6) have been complied with, the nature conservancy board may not grant exemption from a conservation order or a proposed conservation order if the conservation order applied for may

1) damage or destroy breeding or resting areas for the animal species listed in Annex 3 to this Act in their natural range, or

2) destroy the plant species listed in Annex 5 to this Act, in all stages of the biological cycle of the plants.

(4) Decisions pursuant to subsection (1) shall specify that the conditions in subsections (2) and (3) are met.

(5) Further deviations from a conservation order than that mentioned in subsection (1) as well as whole or partial repeal of a conservation order may only take place pursuant to the regulations on implementing conservation orders.

Conservation orders on state-owned areas and in territorial waters etc.

51.-(1) In furtherance of the purpose mentioned in section 1, the Minister for the Environment may adopt conservation orders by statutory order on state-owned areas as well as in territorial waters and the fishing zone as laid down by the Fishing Zone of the Kingdom of Denmark Act (“lov om Danmarks Riges fisketerritorium”).

(2) In furtherance of the purpose mentioned in section 1, the nature conservancy board may, in connection with decisions on conservation orders onshore, adopt conservation orders governing adjacent low tide parts of the territorial waters, when there is a special interest in including these areas in the conservation order. The provisions in section 33(2)-(4), sections 35-38, sections 40-44 and section 50 shall also apply to conservation orders in territorial waters.

Part 7

Nature conservation and arresting sand-drifts

52.-(1) Municipalities which own areas not covered by a conservation order but which are covered by the provisions in section 3, shall conserve these. This shall not apply to watercourses and lakes.

(2) Municipalities which own areas in international nature conservation sites shall conserve such areas in accordance with the provisions laid down in the Natura 2000 plan.

(3) The Minister for the Environment may lay down regulations on conservation of areas which are covered by a conservation order to supplement the conservation orders laid down. The Minister may also lay down regulations on conservation of areas for which a decision pursuant to section 19d, section 19e or section 19f has been made.

53.-(1) The Minister for the Environment shall initiate the measures necessary to reduce sand drift in the dune conservation areas mentioned in section 8 and section 9.

(2) The Minister for the Environment may order the owner of an area, which is not a dune conservation area pursuant to section 8 or section 9, to carry out and pay for the measures necessary to reduce sand drift. The Minister for the Environment may order that the owner’s use of the area be restricted.

(3) If an order is not complied with in due time, the Minister for the Environment may have the work done immediately at the owner’s expense. The same shall apply if the work cannot be delayed until an order is processed.

(4) The decision of the Minister for the Environment on whether to launch sand-drift arresting measures shall be made on the basis of consideration about nature, including international nature protection interests, the landscape and expenses for preventing sand drifts compared with other societal values concerned. If the Minister decides not to carry out sand-drift arresting measures on a property which is significantly threatened by sand drifts, the Minister may permit the owner to carry out and pay for the measures necessary if this can be done in compliance with the considerations mentioned above.

54. Expenses to reduce sand drifts on dune conservation areas shall be paid as five-sixths by the state and one-sixths by the municipality. Expenses to reduce sand drifts on the areas of the state shall, however, only be paid by the state.

Part 8
Management of nature

Acquisition, loans and grants etc.

55.- (1) The annual finance acts shall lay down an allocation within which the Minister for the Environment may
1) acquire real property and pay for operating and construction expenses on real property acquired, including for
afforestation,
2) provide loans to municipalities or non-profit associations, foundations, institutions, etc. to enable these to acquire real
property and
3) provide loans and grants to municipalities, non-profit associations, foundations, institutions etc. as well as private
property owners, to enable them to conserve, preserve and restore natural areas, and to improve the opportunities for
outdoor activities.

(2) The Minister for the Environment may sell real property.

(3) Grants made in accordance with subsection (1), no. 3 may be made subject to the conclusion of an agreement on nature
conservation, nature restoration and public access. Such agreements may be registered in the Land Registry in respect of the property
concerned. Registered agreements shall be binding upon the owners and holders of rights to the properties regardless of when these
rights were established.

(4) The Minister for the Environment may compensate for damage that might occur as a result of agreed public access to a private
property.

(5) The Minister for the Environment may lay down more detailed regulations on the administration of subsections (1) and (4).

55a. The Regional Council may allocate time-limited grants for projects contributing to the realisation of visions and objectives in
the regional development plan within the purpose of this Act.

56.- (1) The Minister for Finance shall lay down the terms of loans granted pursuant to section 55(1), nos. 2 and 3.

(2) After consultation with the Minister for Finance, the Minister for the Environment may accept donations made in furtherance
of the purpose of this Act.

56a. An action for recovery of payment made by mistake in connection with grants financed through national funds as well as EU
funds, shall be subject to a limitation period as a whole according to the regulations laid down in existing regulations.

Right of pre-emption

57.- (1) The Minister for the Environment may determine that the state shall have a right of pre-emption on properties located in
rural zones or summer cottage areas which are particularly well suited to fulfil the purpose of this Act.

(2) The owner of the property concerned shall be notified of this right of pre-emption, which shall be registered in the Land
Registry for the property.

(3) This right of pre-emption shall respect private agreements on rights of pre-emption and options to purchase that were
registered in the Land Registry before 17 November 1988, but otherwise shall have first priority over other rights to the property,
regardless of when these rights were established.

58. The right of pre-emption shall apply to each acquisition of the property or parts of the property. Nevertheless, the right of pre-
emption shall not apply

1) when the state or municipality acquires the property for other purposes than those laid down by this Act,
2) when the property is acquired by a person by inheritance, by taking over to retain undivided possession of an estate or by
dividing common property, or
3) when the acquirer is the previous owner’s spouse or is related by blood or by marriage to the previous owner in the
direct line of ascent or descent or collaterally as close as siblings or their children.

59.- (1) The regulations in sections 13-17 of the Act on State Procurement of Land and Loans for Agricultural and Forestry
Purposes etc. (“jordfordelingsloven”) shall apply correspondingly when the right of pre-emption has been imposed pursuant to
section 57, to the effect that the Minister for the Environment shall take the place of the Minister for Food, Agriculture and Fisheries,
and to the effect that the Valuation Commission, cf. section 46 shall take the place of the road valuation authorities.
(2) The time limit for establishing the right of pre-emption shall, however, be eight weeks for cases in pursuance of this Act.

Expropriation

60.-(1) The Minister for the Environment may expropriate property in a rural zone or in a summer cottage area if it is vitally important to have rights to the property in order to implement measures based on planning to promote the purpose of this Act, including restoration of wetlands, which shall contribute to improving the aquatic environment.

(2) Expropriation pursuant to subsection (1) may, however, not be applied to promote state afforestation.

(3) The municipal council may expropriate property if it is vitally important to have rights to the property to realise the Natura 2000 plan.

(4) In connection with the expropriation the regulations in section 39(1), (2) and (4), section 43, section 44(1), (3) and (4), section 45, section 47 and section 49(2) shall apply correspondingly with the modifications necessary because, in connection with expropriation pursuant to subsection (1), the Minister for the Environment takes the place of the nature conservancy board. In connection with expropriation pursuant to subsection (3) the municipal council shall take the place of the nature conservancy board.

Restoration of wetlands to improve the aquatic environment

60a.-(1) For restoration of wetlands which shall contribute to improving the aquatic environment, the Minister for the Environment may authorise the municipal council to exercise the powers incumbent on the Minister for the Environment pursuant to section 55(1), no. 1, section 55(2) and (3), section 57(1), section 59(1), and section 60(1) and (4) as well as pursuant to section 55(1), no. 3, but only in relation to the provision of grants.

(2) The Minister for the Environment may lay down regulations and guidelines on the exercise of the powers of the municipal council.

(3) The Minister for the Environment may lay down regulations on the access to appeal decisions made in accordance with the authority pursuant to subsection (1), including that it shall not be possible to appeal the decision to another administrative authority, cf. however, section 60(4).

Information and involvement of the public

60b.-(1) In connection with cases of major importance pursuant to section 55(1) and (2), section 57(1) and section 60(1), the affected authority shall be informed and included in the decision-making process.

(2) The Minister for the Environment shall lay down further regulations on how the information and involvement of the public pursuant to subsection (1) shall take place.

The Nature Management Committee

61.-(1) The Minister for the Environment shall set up a committee to advise the Minister in cases of major importance pursuant to section 55(1) and (2), section 57(1) and section 60(1).

(2) Upon recommendation, the Minister for the Environment shall appoint a member from the Ministry of Finance, the Ministry of Food, Agriculture and Fisheries of Denmark, Local Government Denmark, the Danish Society for Conservation of Nature, the Danish Outdoor Council, the Danish Farmers’ Union, the Danish Family Farmers’ Association, the National Federation of Large Farmers' Unions, the Danish Hunters' Association, the Danish Forest Association, the Danish Ornithological Society - BirdLife Denmark and the Danish Association of Anglers.

(3) The Minister for the Environment shall also appoint two members with expertise in the natural sciences and heritage, respectively, one member representing tourism in Denmark as well as the chairperson of the Committee and a number of members from the Ministry of the Environment.

(4) The Minister for the Environment shall lay down the rules of procedure for the Committee.

Part 9

Monitoring nature, advisory services etc.
62.-(1) The Minister for the Environment shall monitor the condition of nature in Denmark in cooperation with the public authorities and institutions affected.

(2) The Minister for the Environment may lay down further regulations stipulating how the monitoring shall be carried out.

63.-(1) The Minister for the Environment shall be responsible for advising, guiding and informing other authorities and individuals about national and international issues related to the protection of nature.

(2) The Minister for the Environment may establish guidelines for the nature awareness work of the municipal councils.

64. The Minister for the Environment may establish councils of experts to advise the authorities on issues within the scope of this Act.

### Part 10

**Administration**

**Exemptions etc.**

65.-(1) In special cases, the Minister for the Environment may grant exemptions from the provisions in section 8(1), section 11(3) and section 15(1).

(2) The municipal council may grant exemptions from the provisions in section 16(1), section 17(1) and section 19. The forest owner concerned shall be notified before making a decision about granting exemption from section 17(1).

(3) The municipal council may, in special cases, grant exemption from the provisions in section 3(1)-(3) and section 18(1). The Minister for the Environment may determine that the municipal council shall obtain a statement from the Minister before making a decision related to section 18(1).

(4) In connection with decisions pursuant to subsection (1) on commercial planting of bacciferous scrubs or fruit trees within the extended beach protection line, the Minister for the Environment shall grant an exemption from section 15(1), even though it is not a special circumstance, unless the planting conflicts with substantive considerations relating to the coastal landscape.

(5) The Minister for the Environment may grant exemption from the provisions in sections 8 and 15 if this is necessary to realise a local development plan on expansion with wind turbines in conformity with the municipal planning.

(6) The Minister for the Environment may, if no satisfactory alternative exists, grant exemption from the prohibition in section 29a. The exemption may not prevent maintenance of the relevant population’s conservation status in its natural range and shall aim at

1) protecting wild fauna and flora and conserving natural habitats,

2) preventing serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property,

3) ensuring the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment,

4) promoting research and learning,

5) restoring a population, release or breed species, including artificial propagation of plant species, or

6) allowing taking or storing specimens of the species mentioned in Annex 3 to this Act, in limited and specified numbers and under strictly controlled conditions.

(7) Decisions according to legislation or regulations laid down in pursuance thereof which deviate from the protection under section 29a, shall replace exemptions under subsection (6) if the decision is made under conditions corresponding to subsection (6) and laid down by legislation.

66.-(1) Conditions linked to a licence shall be binding on owners and holders of other rights in the property regardless of when the rights were established. The authority shall have conditions of permanent interest registered in the Land Registry in respect of the property concerned at the expense of the applicant.

(2) A licence shall lapse if it is not exploited within three years after having been granted, or if it has not been exploited for three consecutive years.

66a. The municipal council may have an agreement pursuant to section 19c or a decision pursuant to section 19d, section 19e or section 19f registered in the Land Registry.
67.-(1) The Minister for the Environment may decide to assume the powers of the municipal council in accordance with this Act in cases that affect the statutory tasks of other authorities or in cases that are of major importance.

(2) The Minister for the Environment may lay down regulations on the administration of the municipal council of section 21(3), section 27(1) and section 65(2) and (3),

68.-(1) The Minister for the Environment may order the municipal councils to produce information, including maps, to be used in the assessment of matters covered by this Act. This information may be required to be provided in a specific format.

(2) The Minister for the Environment may prepare nationwide surveys of areas of conservation interest.

69.-(1) The Minister for the Environment may determine that the regulations in sections 8 and 15-18 shall not apply to specified areas, cf. subsection (2). The Minister for the Environment may alter the limits for the protection under section 18 if the area protected is not subsequently increased.

(2) A decision pursuant to subsection (1) relating to section 8 on the sand dune conservation boundary may only be taken, if it will not increase the risk of sand drift or in other ways contravene the sand dune conservation order.

(3) In a decision pursuant to subsections (1) and (2) it may be determined that cancellation or alteration of a protection line shall only apply for a further described local development plan. The decision shall stipulate re-entry into force of the protection line, if the local development plan is changed or repealed.

(4) Changes to the beach protection line and the sand dune conservation boundary shall be registered in the Cadastre, and entry in the Land Registry shall be made on the basis of information from the cadastral authority.

(5) The Minister for the Environment may lay down regulations on publication by the municipal council of the Minister’s decision pursuant to subsection (1).

69a.-(1) The Minister for the Environment may revise the boundaries for sand dune conservation mentioned in section 8(2) and (3) in the event of significant recession or accretion of the coast, or if necessary to prevent the risk of sand drifts.

(2) The Minister for the Environment may revise the beach protection line, cf. section 15 in the event of significant recession or accretion of the coast.

(3) In connection with revision of the sand dune conservation and beach protection line, the course of lines shall be established according to the same criteria as have been used to establish the existing lines. The sand dune conservation boundary shall thus be established 300 meters from the inner border of the beach, and the beach protection line shall be established 300 meters from the beginning of the continuous land vegetation. In areas designated as summer cottage areas, the protection lines shall be 100 meters. The protection lines shall be established at a shorter distance from the coast in areas affected by building development and similar. In stretches with a risk of sand drifts, the provision in section 9 shall apply.

(4) By a revision, areas in urban zones which were not previously covered by the sand dune conservation and beach protection line may not be covered by the provision.

(5) The Minister for the Environment shall undertake to ensure that the sand dune conservation boundary is marked by stakes or similar if located in urban zones or summer cottage areas. The borders for sand dune conservation of areas protected under the previous Prevention of Sand Drift Act may also be marked.

(6) The Minister for the Environment may correct minor errors in connection with establishing the sand dune conservation boundary and the beach protection line.

(7) Changes to the beach protection line and the sand dune conservation boundary shall be registered in the Cadastre, and entry in the Land Registry shall be made on the basis of information from the cadastral authority.

70.-(1) The Minister for the Environment may authorise a government authority set up under the auspices of the Ministry or other government authorities after consultation with the relevant minister, to exercise the powers vested in the Minister pursuant to this Act.
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(2) The Minister for the Environment may lay down regulations on access to appeal decisions made in accordance with the authority pursuant to subsection (1), including that it shall not be possible to appeal the decision.

(3) Furthermore, the Minister may lay down regulations on the exercise of authority which another government authority after consultation with the relevant minister becomes authorised to exercise under subsection (1).

70a. The Minister for the Environment may lay down regulations on the possibility of using digital communication within the scope of this Act, as well as further conditions in this respect.

International obligations

71.-(1) The Danish Government may conclude agreements with foreign states on common measures to fulfil the purpose of this Act or to attend to nature protection-related interests outside Denmark.

(2) The Minister for the Environment shall lay down regulations to fulfil the international agreements concluded in accordance with subsection (1).

(3) The Minister for the Environment may lay down regulations necessary for the application in Denmark of regulations of the European Communities concerning matters covered by this Act.

(4) For the implementation of the directives and decisions of the European Community in the area of nature conservation, the Minister for the Environment shall lay down the following regulations on the circumstances and terms under which

1) licences may be granted pursuant to section 8(5), no. 7, section 15(4), no. 7, section 31(1) and section 32,
2) sand dune conservation may be repealed pursuant to section 9(3),
3) orders and prohibitions may be notified pursuant to section 11(1) and (2), section 26(3) and section 26a(3),
4) exemptions may be granted from section 3(1)-3), section 8(1), section 11(3), section 15(1) and sections 16-19, cf. section 65.
5) exemptions may be granted from regulations issued pursuant to section 8(7), section 51(1) or from regulations laid down by virtue of section 101(1),
6) approval may be granted pursuant to regulations issued according to section 20(2), and
7) construction or protection lines may be repealed wholly or partly pursuant to section 8 and sections 15-18, cf. section 69(1).

(5) Implementation of directives and decisions of the European Community is also in regulations laid down by the Minister for the Environment pursuant to section 8(6) and (7), section 27(1)-(4), section 29(1) and (2), section 30(1)-(3) and section 31(2) and (3).

(6) The Minister for the Environment shall take appropriate steps to protect, maintain or restore sufficiently varied and extensive habitats for wild bird species.


71b. The Minister for Defence shall lay down regulations or provisions on defence activities with a view to implementing the directives and decisions of the European Community in the nature area.

Fees

72. The Minister for the Environment may lay down regulations on fees to wholly or partly cover the expenses of the authorities in the administration of this Act.

Part 11
Supervision

73.-(1) The municipal council shall ensure compliance with this Act, the regulations issued in accordance with this Act, as well as provisions of conservation orders.

(2) The Minister for the Environment shall ensure compliance with the regulations in sections 8 and 9 on sand dune conservation, section 15 on the beach protection line and the regulations in Part 5 on protection of plant and animal species, etc.

(3) The Minister for the Environment may determine that such supervision shall be carried out by another authority.
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(4) The supervising authority shall ensure compliance with the orders and prohibitions pursuant to this Act as well as with the terms laid down in licences.

(5) The supervising authority shall ensure rectification of a situation in violation of legislation, unless the situation is of minor importance.

(6) The municipal council shall inform the Minister for the Environment if it learns of an illegal situation which is not governed by the supervision of the municipal council pursuant to subsection (1). Similarly, the Minister for the Environment shall inform the municipal council if the Minister learns of an illegal situation which is not governed by the supervision of the Minister pursuant to subsection (2).

(7) The Minister for the Environment may lay down regulations relating to the execution of these supervision activities.

74.-(1) The owner or user of a property shall be responsible for rectifying an illegal situation, unless otherwise stipulated in Part 11a.

(2) The supervising authority, cf. section 73, may have an order to rectify an illegal situation registered in the Land Registry at the owner’s expense. When the situation has been rectified, the authority shall have the order deleted from the Land Registry.

(3) If an order served by judgement in a court of law to rectify an illegal situation is not complied with in due time and the imposition of penalty fines cannot be expected to lead to compliance with the order, the supervising authority may take the necessary measures to rectify the illegal situation at the expense of the person obligated. The police shall provide the necessary assistance in this respect.

(4) If an illegal situation constitutes a danger to the maintenance of the condition of an area or to animals and plants protected pursuant to this Act, and an order to rectify the situation is not complied with in due time, the supervising authority may have the necessary work carried out immediately at the expense of the person obligated. The police shall provide the necessary assistance in this respect.

(5) If an order to rectify an illegal situation covered by section 21(1) or by regulations issued under section 21(2), nos. 2 and 5 is not complied with in due time, the supervising authority may have the necessary work carried out immediately at the expense of the person obligated.

75. (Repealed).

76.-(1) The authorities pursuant to this Act or persons empowered by these authorities shall have the right of access, without a court order, to public and private property to exercise the powers provided by this Act, including the conduct of investigations of importance for the purpose of this Act. The same shall apply correspondingly to premises that are used wholly or partly for commercial purposes. Proof of identity shall be presented on request.

(2) The police shall provide the necessary assistance in exercising the right of access provided in subsection (1).

(3) In inspections of enterprises, the owner and employees shall, on request, provide the necessary guidance and help to the authorities.

Part 11a

Environmental damage to protected species or international nature conservation sites

77. Environmental damage or imminent danger of environmental damage shall be construed in accordance with sections 7, 10 and 11 of the Environmental Damage Act ("miljøskadeloven").

77a.-(1) The person responsible for operation shall mean anyone operating or controlling the commercial activity concerned.

(2) The person responsible for environmental damage or imminent danger of environmental damage shall mean anyone responsible for operation if the damage or imminent danger of damage is due to reckless behaviour exercised by the person concerned.

77b.-(1) The person responsible for operation shall, in the event of environmental damage or imminent danger of environmental damage immediately notify the supervising authority, cf. section 73(1) and (2) about all relevant aspects of the situation.

(2) The person responsible for operation shall immediately take the steps necessary to prevent imminent danger of environmental damage. The person responsible for operation shall, if environmental damage has occurred, immediately take every practicable step to limit the extent of the damage and to prevent further damage.
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(3) The supervising authority shall ensure that the obligation under subsections (1) and (2) is complied with even if no decision under section 77e has been taken.

77c. The supervising authority may order the person responsible for operation to provide information of importance to the assessment of whether environmental damage or imminent danger of environmental damage exists. The person responsible for operation may also be ordered to carry out investigations, analyses, measurements of substances and similar at own expense, in order to identify the reason and effects of impacts on nature or the environment which have occurred.

77d. Orders under section 77c may be issued, regardless of whether the person responsible for the operation has rights to the property where impacts on nature or the environment have been demonstrated. The order shall establish a duty to re-establish the property.

(2) If the person responsible for the operation does not have rights to the property, the supervising authority may inform the person who has rights to the property an order to accept that investigations etc. be carried out by the person responsible for the operation. The order shall be binding on the person who, at any time, has rights to the property.

77e.- (1) In the event of environmental damage or an imminent danger of environmental damage to be dealt with according to the Environmental Damage Act, the supervising authority shall make a decision in this respect.

(2) The Minister for the Environment may lay down regulations to the effect that the municipal council shall present a draft decision pursuant to subsection (1) to obtain a binding statement from the Minister for the Environment as to whether environmental damage or imminent danger of environmental damage to be dealt with under the Environmental Damage Act exists. The Minister for the Environment may also lay down regulations to the effect that the binding statement may first be appealed as part of an appeal of a decision under Part 2 or 3 of the Environmental Damage Act.

77f. In the event of environmental damage which affects or may affect another EU country, the supervising authority shall take a decision in this respect, regardless of whether a decision can be made under section 77e on who is responsible for the environmental damage.

77g.- (1) In cases where the municipal council is the supervising authority, the supervising authority shall submit the decision on whether environmental damage or imminent danger of environmental damage exists, as well as the material heard in the assessment of the case, to the Minister for the Environment. Submission shall take place simultaneously with notification to the person responsible.

(2) The municipal council shall publish the decision.

(3) The Minister for the Environment may lay down regulations on the publication.

(4) A decision that environmental damage or imminent danger of environmental damage exists to be dealt with pursuant to the Environmental Damage Act, may first be appealed as part of an appeal against a decision according to Part 2 or 3 of the Environmental Damage Act. The time limit for appeal shall be the same period as the time limit for appeal for the decision according to the Environmental Damage Act, and the appeal shall be filed in accordance with section 52 of the Environmental Damage Act.

77h.- (1) Upon request of the person(s) entitled to appeal pursuant to section 86(1), nos. 4-6 and subsection (2), the supervising authority shall make a decision pursuant to section 77e or section 77f.

(2) The request shall be accompanied by relevant information about the presumed environmental damage or imminent danger of environmental damage.

(3) The supervising authority may refuse to make a decision about whether there is environmental damage or imminent danger of environmental damage, if the request is not accompanied by information as mentioned in subsection (2).

Part 12

Appeals and legal proceedings

Appeals

78.- (1) The decisions made by the municipal council according to this Act or the regulations issued pursuant to this Act may be appealed to the Nature Protection Board of Appeal according to the provisions in this Part. Decisions pursuant to section 73(5) however, may not be appealed.
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(2) The Minister for the Environment may determine that decisions made by the municipal council according to the regulations issued pursuant to section 20(2) may not be appealed.

(3) Decisions made by the nature conservancy board pursuant to section 50(1) may be appealed to the Nature Protection Board of Appeal according to the provisions laid down in this Part. In relation to appeals on the other decisions made by the nature conservancy board, section 43 shall apply.

(4) Decisions made by the Minister for the Environment pursuant to section 9, section 11(1) and (2), section 27(1) and (2), section 53(1), (2) and (4), section 65(1) and Part 11a may be appealed to the Nature Protection Board of Appeal pursuant to the provisions laid down in this Part. Other decisions pursuant to this Act may not be appealed to another administrative authority, cf. however, section 60(4).

(5) The Minister for the Environment may lay down provisions on appeals on decisions made by the Minister according the regulations issued in pursuance of this Act. The Minister for the Environment may determine that such decisions may be appealed to the Nature Protection Board of Appeal, or that such decisions may not be appealed to another administrative authority.

(6) The Minister for the Environment may lay down provisions on appeals to decisions made by an authority, which, according to the decision of the Minister for the Environment in section 73(3) shall supervise compliance with this Act. The Minister for the Environment may determine that such decisions may be appealed to the Nature Protection Board of Appeal, or that such decisions may not be appealed to another administrative authority.

79.- (1) The Minister for the Environment shall set up a Nature Protection Board of Appeal as the appeals body for administrative decisions according to the regulations laid down in this Part, and to the extent otherwise stipulated by legislation.

(2) The board and its members shall be independent of instructions on processing and decision of the individual case.

80.-(1) The board shall comprise:

1) a chairperson,
2) two members appointed by the Supreme Court among members of the Court, and
3) seven members appointed by the Folketinget (the Danish Parliament).

(2) A vice-chairperson may serve as a proxy to the chairperson. The chairperson and the vice-chairpersons shall be graduates in law.

(3) The chairperson shall ensure that the board is assisted by experts to the extent necessary.

(4) Together with appointment of members pursuant to subsection 1, nos. 2 and 3, a proxy for each member shall be appointed. The proxy may participate in the processing and decision of a case if the relevant member is prevented from participating.

(5) The appointments made by the Folketinget (the Danish Parliament) and the Supreme Court shall apply for four years. In the event of resignation, a new member or a new proxy for the remaining part of the period shall be appointed, cf. subsection (1), nos. 2 and 3.

81.- (1) The board shall have a quorum when no less than one-half of the members, including the chairperson or a vice-chairperson, is present.

(2) The decision by the board in individual cases shall be resolved by a simple majority. In the event of parity of votes, the chairperson or the vice-chairperson, respectively shall have the casting vote.

(3) The chairperson of the Nature Protection Board of Appeal may, on behalf of the board, make a decision in the case of appeals according to this Act, if the appeal is deemed to contain issues which are of significant importance in relation to the purpose of this Act.

82. The decisions of the board may not be brought before another administrative authority. This, however, shall not apply to compensation awarded on the basis of a decision under section 19g, a conservation order or an expropriation.

83. The Minister for the Environment shall lay down the rules of procedure of the board.

84. Administration of the board shall be managed by a secretariat which shall also assist in the preparation and execution of the decisions of the board. The board may also obtain guidance statements from experts.
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85. (Repealed).

86.-(1) The following shall have the right to appeal:

1) the addressee of the decision,
2) the owner of the property affected by the decision,
3) public authorities,
4) an affected national park fund established according to the National Parks Act,
5) local associations and organisations with significant interest in the decision,
6) national associations and organisations the main purpose of which is protection of nature and the environment, and
7) national associations and organisations which, according to their purpose, manage significant recreational interests if the decision affects such interests.

(2) Decisions pursuant to Part 11a may be appealed by

1) any person holding an individual, significant interest in the case, and
2) the persons, organisations etc. mentioned in subsection (1), nos. 1 and 2 and nos. 5-7.

(3) In connection with appeals pursuant to subsection (1), nos. 6 and 7, cf. subsection (2), no. 2, the Nature Protection Board of Appeal may demand that the associations or organisations document their right to appeal by submitting their articles of association or in any other way.

87.-(1) The time limit for appeal shall be four weeks from the date of issuing the decision. If the decision is published, however, the time limit for appeal shall always be calculated from publication. If the time limit for appeal expires on a Saturday or public holiday, the time limit for appeal shall be extended to the following business day.

(2) Appeals shall be submitted in writing to the authority that made the decision. The authority shall send the appeal to the Nature Protection Board of Appeal accompanied by the appealed decision and the material that formed the basis for the decision.

(3) Licences may not be exploited until expiry of the time limit for appeal. Appeals made in due time shall stay the appealed decision, unless the appellate authority decides otherwise. This, however, shall not apply to appeals against decisions pursuant to section 27(1) and (2).

(4) Appeals against decisions pursuant to Part 11a shall have a stay of execution, unless the Nature Protection Board of Appeal decides otherwise.

(5) The Minister for the Environment may lay down regulations on notifying the person(s) entitled to appeal.

Legal proceedings

88.-(1) Legal proceedings to challenge decisions made in accordance with this Act or the regulations issued pursuant to this Act, shall be filed within six months after the decision is communicated to the person concerned. If the decision is published, however, the deadline shall always be calculated from publication.

(2) Issues for review by the Valuation Commission, cf. section 45, may not be brought before the courts of law until the Commission has rendered a decision.

Part 13
Penalties etc.

Penalties and confiscation

89.-(1) Unless more severe punishment is incurred under other legislation, anyone who:

1) violates section 3(1), (2) and (3), section 8(1), section 15(1), section 16(1), section 17(1), section 18(1), section 19, section 21(1), section 28, section 29a, section 31(1), section 32, section 37(2), section 41(1) and (2), or section 74(1),
2) acts in contravention of a decision made under section 19d, section 19e or section 19f,
3) omits to give notification as mentioned in section 19b(1) and (4), and section 26a(3) and (4),
4) passes through or stays in a natural area in another way than allowed in accordance with the regulations in Part 4,
5) prevents or hinders public access to nature in contravention of the regulations in Part 4,
6) fails to comply with a prohibition or order issued in accordance with section 11(1), section 23(8), section 24(5), section 26(3), section 27(1) and (2), section 34(1), section 53(2), section 73(5), section 75(2), section 77c or section 77d,
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7) in contravention of section 76(1), obstructs access to a property or fails to comply with a request made in accordance with section 76(3),
8) fails to notify or take the steps mentioned in section 77b,
9) fails to comply with a prohibition or order issued in accordance with the regulations laid down in pursuance of this Act,
10) acts in contravention of a provision of a conservation order, a conservation order or an agreement on a conservation order concluded for the nature conservancy board, or disregards rules issued in pursuance hereof,
11) disregards conditions laid down in a licence or approval in accordance with this Act or in accordance with regulations issued in pursuance of this Act.

(2) The penalty may increase to imprisonment of up to one year, if the violation is committed intentionally or by gross negligence and if through this violation

1) the interests that this Act strives to protect are harmed or endangered, cf. sections 1 and 2, or
2) a financial advantage is achieved or strived towards by the person concerned or others, including reductions in expenses.

(3) Regulations issued in accordance with this Act may determine that a fine shall be imposed on anyone who violates the provisions of these regulations or violates the provisions of regulations covered by section 71(3). It may further be established that the penalty may be increased to imprisonment of up to one year in the circumstances described in subsection (2).

(4) Companies etc. (legal persons) may incur criminal liability according to the regulations in chapter 5 of the Criminal Code.

(5) If the benefits acquired through the contravention are not to be confiscated, fines and supplementary fines shall be set which take special account of the size of the benefits which were acquired or which were intended to be acquired, cf. subsection (2), no. 2.

(6) If the violation is committed using a motor vehicle and the operator is domiciled in and the vehicle registered outside Denmark, the police may sequester the vehicle until fines, the cost of proceedings and compensation for damage are paid or a guarantee is presented. If the amount is not paid within two months after the final decision in the case, the vehicle may be distrained.

(7) The regulations of the Administration of Justice Act on detaining items that should be confiscated shall apply correspondingly to the initiation of sequestration in accordance with subsection (6). Sequestration may only be effected if it is necessary to ensure payment of the amount. If the operator was not authorised to be in possession of the vehicle, it shall not be sequestered.

(8) The regulations of subsections (6) and (7) shall not apply to vehicle operators domiciled in Finland, Iceland, Norway or Sweden.

(9) The period of limitation for criminal liability shall be five years for the violations, etc. described in subsection (1), and for violations of the provisions of regulations issued in accordance with this Act.

(10) Cases shall be treated as police cases. The remedies laid down in Part 73 of the Administration of Justice Act may be used to the same extent as in cases involving the state prosecutor.

90. The Minister for the Environment shall determine the action to be taken with regard to animals and plants and parts and products thereof confiscated in connection with violation of this Act or of regulations issued in accordance with this Act.

91. If wild animals or plants or products thereof are imported in violation of the regulations issued in accordance with section 30, the expenses incurred for storage etc. and for the transport of the goods back to the country of origin or to the country from which the goods were dispatched shall, by order of the Minister for the Environment, be paid by the person who transported them to Denmark or by the person for whom the goods were imported or for whom the goods were intended. The same shall apply if the goods arrive in Denmark and the conditions for granting an import licence in accordance with the regulation in the 1st clause have not been complied with.

Statutory debt collection, etc.

92. If the fees described in section 72 and expenses for which the authorities are entitled to obtain coverage in accordance with section 53(3), section 66(1), section 74(2)-(4), section 75(2) and (3) and section 91, are not paid in due time, the authorities may collect default interest of 1.3% per month for each full month elapsed from the due date.

Part 14
Entry into force and transitional provisions

93.-(1) This Act shall enter into force on 1 July 1992.
(2) The following acts shall be repealed:

3) Act no. 339 of 24 May 1989 on management of nature,
4) Act no 595 of 13 November 1940 on the construction of paths, etc. in the green areas of Greater Copenhagen,
5) Act of 30 January 1861 prohibiting taking unleashed dogs into Jægersborg Dyrehave, etc.

(3) The provisions on approval of location plans, architectural drawings, materials and choice of colours, etc. in the declarations registered in the Land Registry by the Beach Conservation Commission in accordance with section 25(1), last clause, in Statutory Order no. 194 of 16 June 1961 on the Conservation of Nature Act, shall be repealed.

94.-100. (Omitted)

101.-(1) Regulations issued in accordance with the provisions described in section 93(2) shall remain in force until replaced by regulations issued according to this Act. Violation of the regulations shall be punishable according to the regulations hitherto in force.

(2) The Minister for the Environment may, however, determine that the appeals upheld according to subsection (1) on preparation and content of conservation plans shall be derogated from in special cases.

(3) The statutory orders on scientific reserves issued in accordance with previous legislation, shall remain in force until they are repealed or lapse. The statutory orders may be extended.

(4) (Omitted)

102.-(1) Decisions according to the regulations mentioned in section 93(2) and section 101 shall remain valid until new decisions are taken in accordance with this Act or regulations issued according to this Act. Violations of the decisions shall be punishable according to the regulations hitherto in force.

(2) Orders on restrictions in public access to the beach made according to section 23(3) of Statutory Order no. 194 of 16 June 1961 on the Conservation of Nature Act, shall maintain validity until new decisions are made according to this Act or according to regulations in this Act.

103.-(1) The right to take proceedings, which in registered construction and conservation easements pursuant to Act no. 595 of 13 November 1940 on paths, etc. in the green areas of Greater Copenhagen which falls to the public authorities, shall fall to the municipal council. The same shall apply to the powers, which according to declarations and agreements under this Act and mentioned in subsection (1), fall to the government authorities.

(2) The powers, which fall to the Nature Conservancy Council pursuant to legislation, preservation orders etc., shall fall to the Minister for the Environment. The Minister for the Environment may, however, determine that the powers or certain types of powers shall be exercised by other authorities or institutions, including the council established according to section 64(1).

(3) The powers, which fall to the nature conservancy boards in previous decisions on construction and protection lines, public access and outdoor advertisements, shall fall to the municipal council. The powers concerning the beach protection line shall, however, fall to the Minister for the Environment. The powers, which fall to the National Trust, shall fall to the Nature Protection Board of Appeal.

104.-(1) The previous nature conservancy boards and the National Trust shall be maintained for up to one year after the entry into force of this Act to finish hearing pending cases according to the regulations hitherto in force. If such a case has not been decided by the board during that time, the case shall be transferred to the authority which should make a decision on the case if it had been commenced after the entry into force of this Act. The case shall be heard and decided according to this in conformity with the regulations of this Act and with regulations issued according to this Act.

(2) If one of the previous nature conservancy boards or the National Trust is unable to decide a pending case within one year after entry into force of this Act, the board may immediately transfer the case to the authority mentioned in subsection (1), 2nd clause. Subsection (1), 3rd clause shall then apply.

(3) The decision of the nature conservancy board in a case covered by subsection (1), 1st clause may be appealed according to the provisions laid down in this Act.

(4) The decision of the National Trust on compensation issues in a case covered by subsection (1), 1st clause, may be appealed to the Valuation Commission according to the provisions laid down in this Act.
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(5) The Minister for the Environment may also lay down further regulations of transfer for hearing pending cases.

105. This Act shall not apply to the Faeroe Islands and Greenland.

Act no. 269 of 6 May 1993 on hunting and wildlife management, which amends section 30(1) and (2) shall include the following commencement provision:

58. This Act shall enter into force on 1 April 1994.

(2)-(4) (Omitted)

Act no. 439 of 1 June 1994 amending the Planning Act and the Protection of Nature Act (protection of coastal areas) amending sections 8, 15, 25, 65 and 69 and inserting new sections 15a-d shall include the following commencement provision:

3. (1) This Act shall enter into force on 1 August 1994, cf. however, subsection (2).

(2) The Minister for the Environment shall lay down the time of entry into force of section 2, nos. 1, 2 and 4 and may determine that the entry into force shall be at different dates in the individual counties.

(3) In provisions laid down in pursuance of subsection (2), the Minister for the Environment shall determine that areas which at the time of entry into force are covered by a local development plan may be utilised in accordance with the provisions of the local development plan regardless of the provisions in section 2, nos. 1 and 2. This, however, shall not apply to areas with dune formations within 100 meters from the beaches mentioned in section 8(2), no. 1 of the Protection of Nature Act, in the wording of section 2, no. 1 of this Act.

(4) After the entry into force of section 2, nos. 1 and 2, no reafforestation of areas may take place where planting that was not part of the previous operations has been carried out after 1 August 1994.

(5) Statutory Order no. 547 of 22 June 1992 on construction and protection lines as well as statutory order no. 552 of 22 June 1992 on sand dune conservation shall remain in force until replaced by the provisions issued in pursuance of this Act.

Act no. 19 of 13 January 1997 amending the Protection of Nature Act and the Mineral Resources Act (amendment of rules of appeal) amending sections 78 and 81 and repealing section 83(2) and section 85 shall include the following commencement provision:

3. (1) This Act shall enter into force on 1 July 1997.

(2) Decisions which have been appealed before the entry into force of this Act shall be finally heard according to the rules of appeal hitherto applicable.

Act no. 478 of 1 July 1998 amending the Environmental Protection Act, the Protection of Nature Act, the Watercourse Act and the Planning Act (adjusting the harmonisation requirements and restoration of wetlands in accordance with the agreement on the Action Plan for the Aquatic Environment II) amending section 2 and section 60(1) and inserting a new section 60a shall include the following commencement provision:

5. This Act shall enter into force on 15 July 1998.

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3 As worded in Act no. 282 of 12 May 1999.
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Act no. 282 of 12 May 1999 amending the Protection of Nature Act and the Act amending the Planning Act and the Protection of Nature Act (amending the regulations on entry into force etc. of the extended sand dune conservation and beach protection line as well as establishment hereof in urban zones) amending sections 8, 10, 15, 15a, 15b, 15d, 65, 67 and 69, and amending section 3(2) of Act no. 439 of 1 June 1994 shall include the following commencement provision:

3.

(1) This Act shall enter into force after publication in the Danish Law Gazette.3

(2) Section 1, nos. 1, 8 and 9 shall, however, not enter into force in the individual counties until the Minister for the Environment determines the entry into force of extended protection lines in the individual counties.

Act no. 447 of 31 May 2000 amending certain environmental acts (implementation of the Aarhus Convention etc.) which inserts a new section 60b and amends section 86 shall include the following commencement provision:

14.

(1) This Act shall enter into force on 15 September 2000, cf. however subsections (2)-(4).

(2) Regulations of this Act on access to appeal decisions shall apply to cases which are decided in the first instance after entry into force of this Act. (2nd clause omitted)

(3)-(4) (Omitted).

The Museums Act, Act no. 473 of 7 June 2001 amending sections 14, 65, 78 and 89 and inserting a new section 14a shall include the following commencement provision:

41.-(1) This Act shall enter into force on 1 January 2002. At the same time, the Museums Act etc., cf. Consolidating Act no. 739 of 17 July 2000 shall be repealed. Section 27(4)-(7) of this Act shall be effective from 1 January 2003. Until 1 January 2003 the previous financing principles for the archaeological survey activities, cf. section 26(3) of the Museums Act etc., cf. Consolidating Act no. 739 of 17 July 2000 shall be maintained.

Act no. 145 of 25 March 2002 amending various acts as a consequence of the merging of municipalities on Bornholm, amending sections 35, 46, 49 and 77, shall include the following commencement provision:

78.

(1) This Act shall enter into force on 1 January 2003, (2nd indent omitted).

(2) (Omitted)

Act no. 454 of 9 June 2004 amending the Protection of Nature Act, the Planning Act, the Watercourse Act and the Museums Act amending sections 3, 4, 5, 6, 7, 8, 12, 13, 14, 14a, 15, 15a-d, 18, 21, 22, 23, 24, 25, 26, 36, 37, 38, 39, 41, 43, 45, 50, 52, 53, 60, 60a, 64, 65, 66, 66a, 69, 72, 74, 75, 78, 82, 87 and 89 and inserting a new Part 2a (sections 19a-h) as well as inserting new sections 26a, 37a, 38a, 43a, 69a and 70a shall include the following commencement provision:

5.

(1) This Act shall enter into force on 1 October 2004.

(2) Section 1, no. 47 shall, however, not enter into force until 1 August 2006.

3 This Act was published in the Danish Law Gazette on 14 May 1999.
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(3) Statutory orders on the beach protection line and the sand dune conservation boundary and on various provisions in the Protection of Nature Act issued according to the regulations described in section 1, no. 7 (sections 15a-15d of the Protection of Nature Act) shall remain in force.

(4) Conservation orders pending before nature conservancy boards or the Nature Protection Board of Appeal at the entry into force of this Act shall be covered by the provisions in section 1, nos. 22 and 33 (section 37a and section 43a of the Protection of Nature Act) to the effect that the time limit is calculated from the entry into force of this Act.

(5) (Omitted)

Act no. 431 of 6 June 2005 amending various acts (simplification, harmonisation and objectification of the regulations on collecting debt to the public sector, etc. as well as possibility of using digital payslips) amending section 92, shall include the following commencement provision:

85.

(1) This Act shall enter into force on 1 November 2005, cf. however subsection (2).

(2) (Omitted)

Act no. 535 of 24 June 2005 on state procurement of land and loans for agricultural and forestry purposes amending section 59, shall include the following commencement and transitional provisions:

28.- (1) This Act shall enter into force on 1 July 2005, cf. however, subsection (2).

(2)-(3) (Omitted)

Act no. 567 of 24 June 2005 amending the Protection of Nature Act (implementation of the municipal reform), amending sections 3, 8, 15, 19a-h, 20, 21, 23, 24, 26, 26a, 29, 33, 34, 35, 46, 49, 52, 55, 58, 60, 60a, 61, 62, 63, 65, 66a, 67, 68, 73, 78, 89 and 103, and repealing section 77 and inserting a new section 55a, shall include the following transitional and commencement provisions:

(2)

(1) This Act shall enter into force on 1 January 2007.

(2) Cases which at the date of entry into force of this Act have not been finalised by the county council shall be passed to the authority competent to hear the case in accordance with section 1.

(3) The watercourses which at the date of entry into force of this Act have been designated as protected according to the regulations in section 3(1) of the Protection of Nature Act shall remain protected.

(4) Cases which according to Part 6 of the Protection of Nature Act on conservation orders, and which at the date of entry into force of this Act, have not been finalised by the nature conservancy board, shall be finalised according to the provisions in section 1.

(5) The Minister for the Environment may lay down regulations on hearing cases according to Part 6 of the Protection of Nature Act on conservation orders, pending before the Nature Protection Board of Appeal or the Valuation Commission at the date of entry into force of this Act.

(6) The Minister for the Environment may lay down more detailed regulations on future exercise of the powers and obligations which fall to the county council in decisions on conservation orders, preservation orders, agreements, declarations and similar.

(7) The Minister for the Environment may also lay down more detailed transitional regulations.

Act no. 538 of 8 June 2006 amending the Administration of Justice Act and various other acts (reform on the police and courts of law) amending section 88(3), shall include the following transitional and commencement provisions:

105.
(1) This Act shall enter into force on 1 January 2007, cf. however subsections (2)-(22) and section 106.
(2)-(22) (Omitted)

Act no. 571 of 9 June 2006 amending the Protection of Nature Act, the Environmental Protection Act and various other acts (amendment of the appeals board and provisions regarding appeals in a number of acts in the environmental area) amending section 80, shall include the following transitional and commencement provisions:

12.

(1) This Act shall enter into force on 1 January 2007, cf. however, subsection (2).
(2) (Omitted)

(3) Cases which are brought before the Danish Environmental Board of Appeal as at 1 January 2007 shall be finalised according to the regulations hitherto in force.

Act no. 1571 of 20 December 2006 amending the Environmental Protection Act, the Protection of the Marine Environment Act ("lov om beskyttelse af havmiljøet") and various other acts (repeal of access to transfer authority to municipal communities and amendment of provisions concerning delegations etc. in a number of acts in the area of nature and the environment) amending section 65 and section 70, shall include the following transitional and commencement provisions:

23.

(1) This Act shall enter into force on 1 January 2007, cf. however, subsection (2).
(2) (Omitted)

Act no. 523 of 6 June 2007 amending various legal provisions on limitation periods for claims, etc. (Amendments consequential upon a new act on limitation periods on claims, repeal of the deadline for complaints under the Danish Sale of Goods Act for certain purchases etc.) inserting section 55a, shall have the following commencement provision:

47.

This Act shall enter into force on 1 January 2008.

Act no. 533 of 6 June 2007 on national parks amending section 86 shall have the following commencement provision:

37.- (1) This Act shall enter into force on 1 July 2007.

Act no. 507 of 17 June 2008 amending the Environmental Protection Act and various other acts (implementing the environmental responsibility directive) amending sections 74, 78, 86, 87 and 89 and inserting a new Part 11a (sections 77-77h) shall include the following commencement provision:

15.

(1) This Act shall enter into force on 1 July 2008, cf. however, subsection (3).
(2)-(4) (Omitted)
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Act no. 508 of 17 June 2008 amending the Protection of Nature Act, the Hunting and Wildlife Management Act and various other acts (implementing directives on protection of nature) amending sections 30, 31, 50, 71 and 73 and repealing section 55a and inserting new sections 55a, 56a and Annexes 3-5, shall include the following commencement provision:

16.

This Act shall enter into force on 1 July 2008.

Act no. 1336 of 19 December 2008 amending the Taxation at the Source Act ("kildeskatteloven"), the Collection of Taxes Act ("opkrævningsloven") and various other acts (amendments as a consequence of the Act on Collection of Debt Payable to the Public Sector ("lov om inddrivelse af gæld til det offentlige"), repealing section 92(1), (3) and (4) and amending section 92(2) shall include the following commencement provision:

167.

(1) This Act shall enter into force on 1 January 2009, cf. however, subsection (2). Section 11 shall only apply to decisions on withholding of wages made after the entry into force of this Act.

(2) (Omitted)

Act no. 514 of 12 June 2009 amending the Protection of Nature Act, the Hunting and Wildlife Management Act and various other acts (protection of certain animal species etc.) repealing footnotes 1 and 2 to the title of this Act and section 50(3)-(5), inserting footnote 1 to the title of this Act, section 29a, section 29b, section 65(6) and (7), section 71a and section 71b, and amending section 31(2), section 50(6), section 71(4) and (5), section 89(1), no. 1 and Annexes 3 and 4, shall include the following commencement provision:

13.

This Act shall enter into force on 1 October 2009.

Ministry of the Environment, 24 September 2009

Troels Lund Poulsen

/ Niels Christensen
Annex 13

Statutory Order on Conservation and a Wildlife Reserve in the Wadden Sea 1)

The following shall be laid down pursuant to section 51(1), section 70, section 73(3) and section 89(3) of the Protection of Nature Act, cf. Consolidating Act no. 749 of 21 June 2007, as well as section 33, section 49(1) and (3) and section 54(3) of the Hunting and Wildlife Management Act ("lov om jagt og vildforvaltning"), cf. Consolidating Act no. 747 of 21 June 2007:

Part I

Purpose and scope

1. The purpose of this Statutory Order shall be

1) to promote sustainable management of the Wadden Sea,
   a) in order to conserve the Wadden Sea as an overall natural area of national and international importance as habitat for seals as well as breeding, resting and wintering populations of water birds,
   b) where protection of the nature of the area, ecology and the environment, as well as cultural historical values are balanced against the use of the area for commercial and recreational purposes taking into account the infrastructure and safety of the local population, and
   c) where the natural dynamics of landscape development are not affected unnecessarily, and where no other steps are taken to permanently destroy or alter the natural environment, as well as

2) to ensure compliance with Denmark’s international obligations pursuant to
   a) the declaration of 9 December 1982 on protection of the Wadden Sea, signed by the governments of Denmark, Germany and the Netherlands,
   c) Council Directive of 21 May 1992 (92/43/EEC) on the conservation of natural habitats and of wild fauna and flora (the EC Habitats Directive), and
   d) convention of 2 February 1971 on Wetlands of International Importance, especially as Waterfowl Habitat (the Ramsar Convention).

2.-(1) As described in Annex 1, point 1, cf. map sheet 1, this Statutory Order shall include the territorial waters of the Wadden Sea and parts of the North Sea, as well as adjacent areas of land, hereinafter referred to as “the reserve”. The territorial waters shall, where nothing else is specified, be delineated to land by the highest daily water level and include sand banks and shoals as well as state-owned islands, tidal trenches and areas with vegetation of reeds.

   (2) The reserve shall be delineated to the North by Ho Bugt, the northern border for the state areas of Skallingen and by a line from Blåvand Fyr to the border of the territorial waters true west (270 degrees) of the lighthouse.

   (3) The reserve shall be delineated to the west by the border of territorial waters located 3 nautical miles west of the coastline from Blåvandshuk to Skalling Ende and from there, 3 nautical miles west of the ground line, cf. Royal Decree no. 437 of 21 December 1966, between Skalling Ende and the Danish-German border.

   (4) The reserve shall be delineated to the south by the Danish-German border through the tidal area of Lister Dyb as well as the border dam south of Margrethe-Kog.

   (5) The reserve shall be bounded along the coasts of Jutland, Fanø, Manda and Rømø by the top of the current sea wall, and, if there are no sea walls, by the highest daily water level. On Fanø and Rømø, certain areas owned by the state shall be included in the reserve, cf. Annex 1, point 1.1 and map sheet 1.

   (6) This Statutory Order shall not lay down provisions for the parts of the territorial waters which, on approval by the Ministry of Transport, are subject to the territory of a harbour.
3.-(1) Passage shall be prohibited in the following places:

1) the area between Skallingen and Langli, and in the period from 16 September to 15 July on Langli, as well as in an area north, east and south of Langli, cf. Annex 1, point 2.1 and map sheet 2,
2) areas of land at Albuebugten on Fanø, cf. Annex 1, point 2.2,
3) Trinden and Keldsand east of Sønderho, Fanø, cf. Annex 1, point 2.3,
4) the area around Ebbевejen and Låningsvejen to Mando, cf. Annex 1, point 2.4,
5) the areas north and south of the Rømø embankment, cf. Annex 1, point 2.5 and map sheet 5,
6) Helmsødøde south of Havneby on Rømø in the period 1 April to 31 August, cf. Annex 1, point 2.6,
7) an area of Kore Sand, cf. Annex 1, point 2.7,
8) Lammelæger and other sand banks in the western part of Lister Dyb, cf. Annex 1, point 2.8,
9) Jordsand and Jordsand Flak as well as tidal flats west of the protruding dyke at Højer, cf. Annex 1, point 2.9, and
10) Margrethe-Kog south of Højeg Kanal, cf. Annex 1, point 2.10.

(2) In the areas mentioned in subsection (1), nos. 1 and 6 as well as on Skallingen, dogs shall not be allowed.

4.-(1) Passage of motor vehicles and use of wind-powered vehicles shall be prohibited.

(2) The Danish Forest and Nature Agency may, after consultation with the relevant municipal council, lay down regulations on kite-flying, and may, within designated areas, allow the use of wind-powered vehicles.

(3) The provision in subsection (1) shall not apply to passage of motor vehicles

1) on public roads, on Mando Ebbевejen and Låningsvejen as well as the roads leading to parking areas on Skallingen or Højeknolde og Vogterhuset, respectively, in accordance with other relevant rules of access,
2) on beach areas at the western side of Fanø and Rømø in accordance with further provisions by the authorities, and
3) in connection with authorised activities in the area, cf. sections 6, 11 and 12.

5.-(1) Navigation east of the ground line mentioned in section 2(3) at higher speeds than 10 knots shall be prohibited outside the beacons in the following deeps:

1) through Grådyb to and from Esbjerg,
2) through Fano Lo and Slunden in connection with ferry navigation between Esbjerg and Fanø,
3) through Knudedyb to and from Kammerslusen, and
4) through Lister Dyb to and from Havneby on Rømø and the westernmost point of Jordsand Flak, respectively.

(2) Navigation with water scooters, jet skis, water skis, multi-hull dinghies and vessels powered by air screws, as well as board sailing shall be prohibited in the reserve.

(3) The provisions in subsection (2) shall not apply to board sailing and sailing with multi-hull dinghies within the following demarcated areas:

1) along the coast south-east of Blåvandshuk from Hvidbjerg Strand to Højeknolde on Skallingen and on the western side of Fanø and Rømø, and
2) in the Grådyb tidal area off Hjerting east of Hjerting Løb in the period from 1 March to 30 September.

(4) The provisions of subsection (2) shall also not apply to the use of water skis and multi-hull dinghies in demarcated deep from Havneby to Lister Dyb.

(5) Within a distance of 300 meters from the coast between Blåvandshuk and Skalling Ende and on the western side of Fanø and Rømø, navigation with motor-powered vessels may only take place perpendicular to the coastline.

6. The provisions in section 3, section 4(1) and section 5(1), (2) and (5) shall not apply to
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1) owners and users. Unleashed dogs may only be used for hunting and driving livestock,
2) collection of driftwood and flotsam, cf. statutory law,
3) removal of sand by owners and users for own use as near as possible to their property,
4) passage on Langli as well as an area north, east and south of the island at a distance of 300 meters off the coast (highest daily water level) in the period 16 July to 15 September,
5) visits to Nordby Fuglekøje and Sønderho old Fuglekøje at Albuebugten on Fanø when these are open for business,
6) fishing activities for permanent residents on Manda and Fanø,
7) navigation in connection with commercial fisheries, cf. however, sections 8-10,
8) navigation at higher speeds than 10 knots in connection with commercial operation of Esbjerg Havn,
9) landing exercises held by the Danish defence in an area of 300 meters on the coast of Musholm Enge north of Bredmose in Ho Bugt as well as in an area of 5,000 meters along the coast from Blåvandshuk to Skallingen,
10) shooting at earth targets by the Danish defence at the ranges at the northern part of Romø including associated restricted areas in the territorial waters west and north of there, and
11) performance of tasks by the public authorities, including operation of installations, coastal protection and dyke work, arresting sand-drifts, rescue operations, necessary marking for navigation, fisheries control as well as supervision.

Part 3

Hunting

7.-(1) Hunting or other ways of killing, capturing or driving away web-footed birds and wading birds shall be prohibited.

(2) Hunting or other ways of killing, capturing or driving away mammals and birds in Margrethe-Kog, including the protruding dyke with sediment roads and berms, shall be prohibited.

(3) The provision in subsection (1) shall not apply to

12) hunting on certain foreland areas, cf. Annex 2 and map sheets 3-5 (the stretch from Tjæreborg to Ballum) as well as on certain foreland areas on Mando and Romø, cf. Annex 2,
13) hunting on the part of Skallingen which is located south-west of the concrete road and west of the eastern boundary of cadastral numbers 99b and 71a Ho, Ho at Svenskeknolde, cf. map sheet 2,
14) hunting from vessel at anchor as well as hunting by wading west of a line from the southern point of Skallingen to the northern point of Fano, a line from the southern point of Fano to the north-eastern point of Romø and a line from the two boundary beacons at Havsand on Romø to the break point of the Danish-German border east of Ellenbogenspitze on Sild in the period 1 October to 31 January, cf. map sheet 1, and
15) retrieval of killed game from motor-driven vehicle, including searching and killing in connection with the types of hunting mentioned in no. 3.

(4) The provision in subsection (2) shall not apply to hunting of mammals and birds in the part of Margrethe-Kog located north of Højø Kanal:

1) north of a zone of 150 meters along the north side of the road between Højø Sluse and the earth road located about 475 meters west of Højø Sluse, as well as north and east of the two southernmost lots between the road mentioned and the earth road to Emmerlev (at the pumping station),
2) east of the earth road to Emmerlev located at a distance of 150-350 meters from the protruding dyke, as well as
3) south of a ditch running in an east-west direction at the end point of the earth road mentioned above. The ditch is located 1,000 meters south of the northernmost point of the protruding dyke.

(5) In the part of Margrethe-Kog, and in the part of the protruding dyke, including sediment roads and berms located south of Højø Kanal, passage with weapons shall be prohibited.

(6) In the part of the territorial waters of the reserve located east of the line mentioned in subsection (3), no. 3 between the islands, passage with loaded weapons shall be prohibited.

Part 4

Removal of organisms on and in the seabed

8. Mechanical removal of mussels, lugworms and other organisms on and in the seabed shall be prohibited.

9.-(1) The provision in section 8 shall not apply to removal of common mussels by authority of the Ministry of Food, Agriculture and Fisheries of Denmark outside the following areas:

1) Ho Bugt excluding Hjerting Løb, cf. Annex 1, point 3.1,
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2) Juvre Dyb tidal area, cf. Annex 1, point 3.2, and
3) the southern part of Lister Dyb tidal area, cf. Annex 1, point 3.3.

(2) In connection with navigation through the areas mentioned in subsection (1), the trawl warp shall be disconnected from musseling equipment.

10.- (1) The provision in section 8 shall not apply to removal of cockles by authority of the Ministry of Food, Agriculture and Fisheries of Denmark in three areas in the Grådyb tidal area: Langli Sand, Hamborg Dyb and Fanø Sandende, cf. Annex 1, point 4 and map sheet 6.

(2) Demarcation of the areas in subsection (1) may, at the request of the Ministry of Transport, be adjusted if it is deemed necessary for navigation to and from Esbjerg Havn.

(3) The Ministry of Food, Agriculture and Fisheries of Denmark shall, after consultation with the Danish Forest and Nature Agency, lay down a maximum quota for every season based on a biological assessment of the spreading and size of the mussels.

(4) Fishing for cockles may only take place during daytime from sunrise to sunset and only in the periods 1 August to 31 August and 1 November to 29 February.

Part 5

Various measures in territorial waters

11.- (1) A licence to the following work in territorial waters shall be granted by the Ministry of Transport after consultation with the Danish Forest and Nature Agency:

1) construction work, including changes in terrain, establishment of buildings, channels, dams, harbours or other fixed structures, and
2) new coastal protection and expansion or significant reinforcement of existing coastal protection.

(2) Establishment of dredging sites and dredging of decontaminated and dredged materials shall be subject to a licence from the Danish Ministry of the Environment.

12.- (1) Removal of sea materials, drilling or firing in the seabed shall be prohibited.

(2) Notwithstanding the provision in subsection (1), the following shall be permitted:

1) dredging within existing harbour works as well as dredging in harbours, entrances, navigation channels, watercourses and the courses of such in the Wadden Sea, and
2) establishment of drainage ditches from foreland and coastal protection fields.

(3) Notwithstanding the provision in subsection (1), the Danish Forest and Nature Agency may, pursuant to the Mineral Resources Act, allow removal of sea materials for construction, repairs and reinforcement of dykes and adjacent foreland, if it is not possible to find suitable materials within the dykes, or to procure in connection with cleaning out or dredging of channels etc., cf. subsection (2), no. 1.

(4) Notwithstanding the provision in subsection (1), the Ministry of Transport may, after consultation with the Danish Forest and Nature Agency, grant a licence to expand or change harbours as well as dredge, expand or redirect entrances, navigation channels, canals, watercourses and the mouths of such into the Wadden Sea.

13.- (1) In territorial waters there shall be no

1) sowing and planting if this is not for the purpose of coastal protection,
2) release of live wild animals and plants foreign to the area,
3) tipping or depositing of waste,
4) establishment of aerial cables with accompanying masts and wind turbines, and
5) release or discharge of waste materials from non-land-based installations.
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(2) Notwithstanding the provision in subsection (1), materials used in connection with securing of dykes and licensed construction work, cf. section 11(1) and section 12(2) and (4), shall be dredged at approved dredging sites.

Part 6

Administrative provisions, penalties and entry into force

14.- (1) The Danish Forest and Nature Agency may, under exceptional circumstances, grant exemptions from the provisions in section 3, section 4(1), section 5(1), (2) and (5), section 7(1), (2), (5) and (6), section 8, section 10(4), section 12(1) and section 13(1). Exemptions from the provisions shall take place after consultation with relevant authorities and landowners.

(2) Decisions made by the Danish Forest and Nature Agency pursuant to subsection (1) may not be brought before other administrative authorities.

(3) The Danish Forest and Nature Agency may, after consultation with the owner, lay down guidelines for public passage on the protruding dyke with associated sediment roads in Margrethe-Kog.

15.- (1) The Danish Forest and Nature Agency shall supervise compliance with this Statutory Order, cf. however, subsection (2).

(2) Supervision of compliance with the regulations mentioned in sections 8-10 shall be carried out by the Ministry of Food, Agriculture and Fisheries of Denmark. Supervision of compliance with the regulations mentioned in section 11 shall be carried out by the approving authority in collaboration with the Danish Forest and Nature Agency.

(3) The Danish Forest and Nature Agency may enter into an agreement with the municipal councils as well as other authorities to the effect that tasks in connection with the supervision mentioned in subsection (1) is to be managed by these.

16.- (1) The following shall be punishable by fine:

   1) violation of section 3, section 4(1), section 5(1), (2) and (5), section 7(1), (2), (5) and (6), section 8, section 9(2), section 10(3) and (4), section 12(1) or section 13(1),

   2) violation of provisions in regulations laid down pursuant to section 4(2) on kite-flying as well as use of vehicles driven by wind power, or

   3) failure to comply with the conditions of an exemption under section 14.

   4) has achieved or strived for a financial advantage for the person in question or for others.

(2) Companies etc. (legal persons) may incur criminal liability according to the regulations in chapter 5 of the Criminal Code.

17.- (1) This Statutory Order shall enter into force on 1 August 2007.

(2) Statutory Order no. 1326 of 20 November 2006 of the Danish Ministry of the Environment on conservation and a wildlife reserve in the Wadden Sea shall be repealed.

Danish Ministry of the Environment, 21 June 2007

Connie Hedegaard

/Anne-Marie Rasmussen
Annex 1

Specification of borders to land for the reserve and areas within the reserve where passage and fisheries are prohibited.

1. The reserve is delineated to land in the following way:
   1.1. Along the coast of Jutland north of Emmerlev Klev as well as Fanø, Mando and Rømø, the border of the reserve follows the top of the sea wall facing towards the Wadden Sea, and where there is no sea wall, the highest daily water level. On Fanø the sea shore areas owned by the state on Søren Jessens Sand, cadastral number 509 Odden By, Nordby and on Rømø, cadastral number 142 Juvre, Rømø as well as cadastral number 90 Kongsmark, Rømø are included in the reserve.
   1.2 Above Varde Å’s outflow to Ho Bugt, the border merges with the eastern border of the fish conservation belt at the estuary of the stream, cf. Statutory Order no. 259 of 22 June 1965 of the Ministry of Fisheries. The border is a straight line between three points; Billum Kirke and two beacons south of the outflow.
   1.3 At Astrup Banke, the reserve boundary is a straight line between the southernmost point of Rejsby Dige and the northernmost point of Ballum Dige, respectively.
   1.4 Between Emmerlev Klev and the Danish-German border (the border dam), the reserve boundary follows the western side of Emmerlev and the top of dyke of Højør, and where there are no dyke off Højør, a straight line between the end points of the dykes.

2. Demarcation of areas where passage is prohibited:
   2.1 The area between Skallingen and Langli, including Langli Sand, bounded by Ebbevejen, and from here by a straight line (160 degrees) to a position in Grådyb (55 degrees 28'17.8 degrees 08'50'E), from here by a straight line towards the south point of Skallingen to Hobo Dyb, and onwards along the east side of Hobo Dyb over the outer point of Spundsen to Skallingen. Passage on Langli as well as in a zone of 300 metres calculated from the highest daily water level, east and south of Langli is prohibited in the Skallingen to Hobo Dyb, and onwards along the east side of Hobo Dyb over the outer point of Spundsen to Skallingen. Passage on these sand banks at a distance of 300 meters calculated from the highest daily water level.
   2.2 Areas of land at Albuebugten: Towards the north bounded by the boundary between cadastral number 190 a and 57 k, Rindby By, Nordby. Towards the south bounded by the boundary between cadastral numbers 9 e and 12 a Sønderho By, Sønderho. Towards the west by the eastern side of the earth road running along the coast of Albuebugten. 2.3 Nordby Fuglekoje and Sønderho old Fuglekoje are thus located within this area.
   2.3 Trinden and Keldsand, cadastral number 309 Sønderho, Sønderho located east of Sønderho, Fanø as well as growth areas covered with rice grass and other marsh plants.

3. Demarcation of areas where removal of common mussels is prohibited:
   3.1 The part of Ho Bugt located outside an area to the south-west by Grådyb from Esbjerg Havn to the entrance to Hjerting Løb, limited to the west by a line across the red marking buoys in Hjerting Løb, true 325 degrees (the two northermest red markings in line) and towards north by 55 degrees 33'250N (Ho Kirke true 270 degrees).
   3.2 The tidal area of Juvre Dyb between Låningsvejen to Mando and the Rømø dam to the west delineated by a straight line between the westernmost point at the north-east point of Mando and Rømø.

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3.3 The tidal area of Lister Dyb south of a straight line from the north-westernmost break point of the Danish-German border in Lister Dyb between Romo and Sild to a point on the west coast of Jutland, where the beacon off Hjerpsted Kirke and the church tower of such is in line.

4. Demarcation of areas in the Grådyb tidal area, where fishing of cockles is permitted, cf. map sheet 6:

4.1 Langli Sand bounded by the coordinates
55 degrees 28'617N.8 degrees 20'850E
55 degrees 30'000N.8 degrees 20'850E
55 degrees 30'000N.8 degrees 21'317E
55 degrees 29'850N.8 degrees 21'533E
55 degrees 29'583N.8 degrees 21'733E
55 degrees 29'100N.8 degrees 21'833E.

4.2 Hamborg Dyb bounded by the coordinates
55 degrees 28'433N.8 degrees 21'083E
55 degrees 28'817N.8 degrees 22'100E
55 degrees 28'133N.8 degrees 22'100E
55 degrees 27'450N.8 degrees 20'600E.

4.3 Fanø Sandende bounded by the coordinates
55 degrees 28'817N.8 degrees 22'100E
55 degrees 28'983N.8 degrees 22'533E
55 degrees 28'833N.8 degrees 23'633E
55 degrees 28'133N.8 degrees 22'100E.

The coordinates used show geographical positions in accordance with the Mercator Projection ED 50.
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Annex 2

Determination of boundaries for areas in the forelands between Tjæreborg and Ballum as well as on Mando and Romø, where hunting is permitted, cf. section 7(3), no. 1.

Knudedyb tidal area

1. Darum-Tjæreborg Dige (map sheet 3):
   1.1 Cadastral number 149 Tjæreborg By, Tjæreborg as well as 24 k, 151, 16 k and 152 in the same place, as well as the part of cadastral numbers 66 and 67 Allerup By, Sneum, located north of a straight line perpendicular from the coast to the easternmost point of the summit of the dyke 285 meters from the northern wall of the lock house.
   1.2 Cadastral number 157, St. Darum By, Darum as well as 56 x, 147 b, 192, 25 u, 158 b as well as the part of 184 in the same place, located within the foreland edge.
   1.3 The part of Darum-Tjæreborg Dige (cadastral number 158 a St. Darum By, Darum) until the summit of the dyke located east of the demarcation of the above areas.

2. Ribe Dige (map sheet 3):
   2.1 The part of cadastral number 184 St. Darum By, Darum located within a distance of 150 meters west of the summit of the dyke between Ribe Dige’s northern groyne and a point 400 meters (measured along the summit of the dyke) north of Darum Bæk and from there in a straight line to the easternmost break point on the road located in the area between two rows of fascines on the north side of the outflow of Darum Bæk.
   2.2 The part of cadastral number 178, Vilslev By, Vilslev, located east of a straight line from the break point mentioned above to a point 180 meters (measured along the summit of the dyke) south of the outflow of Darum Bæk at a distance of 150 meters from the summit of the dyke and from there at the same distance from the summit of the dyke until a line perpendicular to the dyke at Vilslev Søndre Ramp at Ùgrøftvej (municipal road 207).
   2.3 The part of cadastral numbers 130 a and 132 Vilslev By, Vilslev, located within a distance of 150 meters from the summit of the dyke (the boundary between the cadastral numbers mentioned above and cadastral number 178 in the same place is marked in the terrain by a ditch).
   2.4 The part of cadastral number 99 Jedsted By, Vilslev located south of a line perpendicular to the summit of the dyke at Jedsted Engevej (municipal road 204) and within a distance of 220 meters west of the summit of the dyke until 430 meters south of the ramp at Jedsted Engevej. From there the border is a straight line to the north easternmost point on the northernmost plot of land of cadastral number 53 Hillerup By, Farup.
   2.5 The part of cadastral number 53 Hillerup By, Farup which is located south of the latter point, cadastral number 59 Kirkeby By, Farup as well as the part of cadastral number 191, Nr. Farup By, Farup, which is located north of a straight line perpendicular on the dyke to the boundary between cadastral numbers 4 e and 124 n, Nr. Farup By, Farup (the western border of the cadastral number mentioned above is marked in the terrain as a ditch/earth road 150 meters west of the summit of the dyke).
   2.6 The parts of Ribe Dige until the summit of the dyke located east of the demarcation of the areas mentioned above.

The tidal area of Juvre Dyb

3. Rejsby Dige (map sheet 4)
   3.1 The parts of cadastral number 123, V. Vedsted By, V. Vedsted as well as 11 af, 23 a, 12 e, 53 b, 122, 121, 75 g and 2 m in the same place located between the summit of the dyke and the foreland edge.
   3.2 Cadastral number 335, Hviding Ejerlav, Hviding as well as 268, 1080, 332, 1054, 34, 36, 2, 102, 1079, 26, 1078, 267, 1077, 438 in the same place, the part of cadastral number 603 in the same place located south of a straight line in continuation of the boundary between cadastral numbers 267 and 1077 in the same place, as well as parts of cadastral number 429, part of the southernmost point of land of 430 and the part of the southern plot of land of 106 in the same place located within the foreland edge.
   3.3 Cadastral number 115, Rejsby Ejerlav, Rejsby and the northern plot of land of cadastral number 217, Brøns Ejerlav, Brøns as well as a zone along the dyke between Kærbolting Klint and the outflow from Abolling Bæk which is bounded by a ditch located at a distance of 150 meters west of the summit of the dyke, and from the southernmost point of the ditch to the easternmost point on the area between two rows of fascines located 170 meters north west of the summit of the dyke at the ramp south of Abolling Bæk.
   3.4 A zone between the summit of the dyke and the foreland edge from the latter point until a point at the second break of the dyke on Rejsby Dige 930 meters south of the latter ramp and 60 meters west of the summit of the dyke, and from there between the summit of the dyke and a straight line to the northernmost point on the earth road between the land reclamation areas 6 and 7, from where the border runs along the north-south ditch until this is cut off by a straight line perpendicular to the dyke along the southern boundary of the northern plot of land of cadastral number 217, Brøns Ejerlav, Brøns.
   3.5 The part of Rejsby Dige until the summit of the dyke located east of the demarcation of the areas mentioned above.

4. Rejsby Dige, Astrup Banke and Ballum Dige between Brøns Å and the Romø dam (map sheets 4 and 5):
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4.1 Cadastral number 11, Astrup, Brøns as well as 150, 38, 5, 177, 294, 276, 18, 187, 19, 199, 10, 304, 185, 295, 14, 314, 9, 157 in the same place, the parts of cadastral numbers 17, 29, 126 in the same place located west of a straight line between the end of Rejsby Dige and Ballum Dige, respectively, as well as the eastern parts of cadastral number 70 in the same place, which towards the west are bounded by tidal canals running east of the north westernmost plot of land of this cadastral number, and onwards through the southern plot of land of the same cadastral number to the boundary between the parishes of Astrup and Skærbæk.

4.2 Cadastral number 555, Skærbæk Ejerlav, Skærbæk as well as the part of cadastral number 185 in the same place located north and north-east of the old outflow of Brede Å.

4.3 The parts of Rejsby Dige and Ballum Dige until the summit of the dyke located east of the demarcation of the areas mentioned above.

5. Mando (map sheet 1):
5.1 Cadastral number 111 a Mando By, Mando as well as 11 a, 24 a, 13 m, 8 g, 12 a, 50 a, 20 c, 40 a, 43 a, 42 a, 41 a, 39 a, 114 in the same place as well as the part of Mando Dige cadastral number 105 in the same place located west of the south westernmost point of cadastral number 111 a in the same place.

6. Juvre Dige on Romø (map sheet 1):
6.1 Cadastral number 2, Juvre, Romø as well as 20, 8, 7, 798, 288, 25, 17, 50, 363, 6, 23, 162, 831, 50, 348, 183 in the same place as well as the plots of land of cadastral number 241 in the same place located north of the Romø dam.

The tidal area of Lister Dyb

7. Kongsmark Dige on Romø (map sheet 1):
7.1 Cadastral number 268 Juvre, Romø as well as 255, 254 in the same place and cadastral number 10, Kongsmark, Romø as well as 572, 598, 584 and 616 in the same place.

8. Ballum Dige south of the Romø dam (map sheet 5):
8.1 Second plot of land of cadastral number 297, Østerende-Ballum, Ballum south of the Romø dam as well as the part of the plot of land of cadastral number 311 in the same place located between the latter plot of land and a straight line perpendicular to the summit of the dyke 450 meters north of Ballum Sluse.

8.2 The plots of land of cadastral number 311, Østerende-Ballum, Ballum located on the stretch south of the area between two rows of fascines at the northern ramp of Barakvej to the southernmost point of Ballum Diget in the boundary between cadastral numbers 22 and 173 in the same place, as well as cadastral numbers 319, 343, 293, 56, 168, 309 and 173 in the same place.

Romø

9. Areas owned by the state on the west coast of Romø (map sheet 1):
9.1 The part of cadastral number 142, Juvre, Romø located south of the range and south east and east of the border between the sea shore and permanent, coherent vegetation.

Map sheet 1
Overview map

Map sheet 2
The area between Skallingen and Langli
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Map sheet 3
Tjæreborg - Ribe
The stretch between Tjæreborg and Kammerslusen

Map sheet 4
Rejseby
The stretch between Vester Vedsted Sluse and Brøns Å

Map sheet 5
Ballum
The stretch between Brøns Å and Vesterende Ballum

Map sheet 6
The area designated for cockle fishing
(extract of navigational chart no. 95 Grådyb)

Official notes
Annex 14

Danish Act on National Parks, LOV nr 533 of 06/06/2007.
National Parks Act

We Margrethe the Second, by the grace of God Queen of Denmark hereby witness:
Folketinget (the Danish Parliament) has adopted and We with Our consent hereby enact the following Act:

Part 1

Purpose

1. In connection with establishment of national parks, the purpose of this Act shall be to:

1) create and ensure larger coherent natural areas and landscapes of national and international importance,
2) conserve and strengthen the quality and diversity of nature,
3) ensure continuity and opportunities for free dynamics in nature,
4) conserve and strengthen landscape and geological values,
5) conserve and make visible the heritage values and the diversity of the cultural landscape,
6) support research and teaching in the values of the areas,
7) promote the possibilities of the population to use and experience nature and the landscape,
8) strengthen dissemination of knowledge about the values and development of the areas,
9) support developments benefiting the local community, including the business community with respect for conservation interests and
10) enhance awareness about the values of the areas by involving the population in the establishment and development of the national parks.

2.-(1) The Minister for the Environment may establish a national park if the area has national or international importance because of nature and landscape values in the area, and if such establishment enables compliance with the purpose of this Act in the shorter or longer term.

(2) Together with other Danish national parks, the national park shall be able to represent the most important Danish natural habitats.

(3) The establishment of the national park shall improve and strengthen the possibilities for coordinated and long-term developments of nature, landscape, geological, heritage and recreational values in synergy with national interests, the local population and industry.

(4) National parks may be established on dry land, fresh waters and offshore.

3. After implementation of the procedure in sections 4-7, the Minister for the Environment may lay down regulations on the purpose of the national park, the objectives for development hereof and delimitation of the national park. This Statutory Order may also comprise regulations on restricting the authority to plan according to the regulations laid down in the Planning Act within the national park.

Part 2

National park proposals

4.-(1) The Minister for the Environment may prepare proposals for national parks on the basis of surveys which describe the area and show that the establishment of a national park can comply with the purposes of this Act. The surveys shall have been subject to public involvement.

(2) Proposals by the Minister which could affect municipal councils shall be subject to their consent.

5.-(1) Prior to the issue by the Minister for the Environment of regulations on establishing a national park, a proposal shall be published and submitted for public debate.

(2) The Minister for the Environment shall stipulate a time limit of at least 16 weeks for submission of comments on the proposal.
(3) A proposal for a national park shall be submitted to the landowners concerned, as well as local and government authorities the interests of which are influenced by the proposal, and to the organisations etc. which are assumed to have vested a significant interest herein.

(4) The proposal shall be accompanied by supplementary information on the main purpose of the national park proposed, overall conservation interests and development opportunities for the national park, the composition of the board of the national park and the financial basis on which the establishment and operation of the national park are based.

6.- (1) If, following expiry of the time limit pursuant to section 5(2), significant amendments to the proposal for a national park are made, the amended proposal shall be published with a new time limit.

(2) The Minister shall set the time limit for publication at eight weeks as a minimum for presentation of comments on the proposal.

7.- (1) The Minister for the Environment may only change the regulations for a national park after having implemented the procedure in sections 4-6.

(2) If the landowners concerned have requested a moderate expansion, and if the area may contribute to meeting the purpose of the national park, the Minister may, however, change the regulations on delimitation of a national park without following the procedure in sections 4-6.

Part 3

National park funds

8.- (1) The Minister for the Environment shall set up a national park fund for each national park.

(2) The fund shall be an independent body within the government administration.

9. The purpose of the fund shall be to establish and develop the national park within the framework determined on establishment.

10.- (1) The fund shall prepare and revise the national park plan and the fund shall be instrumental in implementing the plan.

(2) The fund shall ensure provision of information about the national park and involvement of the population in decisions pertaining to the development and operation of the national park.

11.- (1) The resources of the fund shall be made up of appropriations established in annual finance acts, as well as contributions from municipalities and other contributors.

(2) The fund may receive inheritances, gifts etc. and grants.

(3) The fund shall present financial statements and be audited pursuant to regulations applicable for the government.

Management and secretariat

12.- (1) The fund shall be managed by a board (the board of the national park) appointed by the Minister for the Environment.

(2) The board shall comprise one chairperson and 6-12 members, appointed upon the recommendation of the organisations concerned, municipalities and the government. When the national park council has been set up, the board shall be augmented by 1 or 2 members appointed by the Minister for the Environment upon the recommendation of the national park council.

(3) The board shall be appointed for 4 years. Reappointment may only take place once. If the chairperson or a member resigns prematurely, the replacement shall be appointed for the remainder of the year.

(4) With the assistance of the Minister for the Environment, the board shall establish rules of procedure for the fund.

13.- (1) The fund shall pay the expenses for the secretariat, to pay the members of the board who are entitled to emoluments, as well as to pay for other administration.

(2) Subject to further specification, the board may authorise the chairperson and the secretariat to make decisions on behalf of the board.
14.-(1) In order to realise the national park plan, the fund may, within the purposes of the national park:

1) enter into voluntary agreements on nature conservation, nature preservation, operation, nature restoration, strengthening heritage values and public access,
2) purchase, manage and sell real property,
3) pay operating expenses and construction costs,
4) pay costs for research, information and communication activities in relation to the national park and
5) provide loans and grants for municipalities, associations, foundations, institutions etc. and private property owners.

(2) The fund may acquire lands designated for agricultural purposes pursuant to the regulations on funds laid down in section 24 of the Agricultural Properties Act ("lov om landbrugsejendomme").

(3) Grants according to subsection (1), no. 5 may be made conditional on the conclusion of agreements as mentioned in subsection (1), no.1.

(4) Agreements pursuant to subsection (1), no. 1 may be registered on the property. Registered agreements shall be binding for the owners and holders of rights to the property regardless of when such rights are constituted.

(5) Payments made by the fund in connection with the conclusion of agreements pursuant to subsection (1), no. 1, cf. no. 5, shall, as a rule, be calculated in the same way as in connection with conclusion of agreements to comply with the Natura 2000 plan under the Protection of Nature Act, i.e. corresponding to the loss inflicted by the agreement on the landowner.

(6) The Minister for the Environment may lay down regulations on the fund’s administration of its resources, including general conditions for giving grants and on changes and cancellations of grants.

15.-(1) When the fund has carried out a nature management project in an area acquired by the fund, this area shall be transferred to the Minister for the Environment for further operation as an agreement on operation shall be concluded in accordance with the national park plan. Similarly an area shall be transferred to the municipal council if this is associated with other land operations of the municipality.

(2) The requirement for transfer shall not apply to areas at which installations have been erected or where building facilities serving purposes relating to information, dissemination, teaching or research have been erected.

Part 4

The national park council

16.- (1) A local national park council shall be established for each national park. The national park council shall act as consultative body for the board of the national park in matters of significant importance and in questions of principle.

(2) The board of the national park shall decide the composition of the council and shall set it up for a period corresponding to the tenure of the board.

(3) Members of the council shall be designated upon the recommendation of the authorities concerned and recommendation from interest groups and trade organisations, the business community and associations with interest in the national park. Furthermore, expert members etc. may be appointed.

(4) The council shall elect a chairperson and a vice-chairperson from among its members.

Part 5

National park plan

17. The national park fund shall, within a time limit set by the Minister for the Environment, prepare a plan to establish and develop the national park as a whole and the individual parts of the park.

18.- (1) The national park plan shall, in relation to the national park, report on the current and potential
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1) natural values, including significant natural habitats and species, and
2) landscape and heritage values.

(2) The plan shall describe

1) how to strengthen the quality of nature, including by expanding natural areas and ensuring continuity and free dynamics in nature,
2) the opportunity for creating connections between the natural areas,
3) possibilities for development in outdoor activities,
4) possibilities for industry and business development, and
5) how to disseminate knowledge about the values of the area.

(3) On the basis of the report, the plan shall set objectives for the development of the national park in relation to the points mentioned in subsection (2).

(4) The national park plan shall describe how the objectives laid down may be achieved, how the expected activities shall be prioritised during the planning period, and how the public will be involved.

(5) The national park plan shall be accompanied by a report on whether realisation of the plan shall depend on licences or exemptions from other legislation.

19. The national park plan may not conflict with the following planning:

1) water plans, Natura 2000 plans, and action plans for the realisation of such plans according to the Environmental Targets etc. Act ("miljømålsloven") for bodies of water and international nature conservation sites,
2) Natura 2000 forestry plans according to the Danish Forest Act ("Skovloven"),
3) regional development plans, municipal plans and local development plans pursuant to the Danish Planning Act and
4) mineral resources plans pursuant to the Mineral Resources Act.

Preparation and revision etc. of the national park plan

20.- (1) Prior to drawing up a proposal for a national park plan, the national park fund shall make a request for ideas, proposals etc.

(2) The request shall include a brief report on the purpose of the national park as well as the basis for establishment. Furthermore, the main issues in connection with planning the work shall be reported.

(3) The request shall take place through public announcement indicating a time limit of at least 12 weeks for submission of ideas and proposals etc.

(4) The national park fund shall be responsible for providing information for use in a public debate about the national park plan.

21.- (1) On expiry of the time limit pursuant to section 20(3) the national park fund may adopt a proposal for a national park plan.

(2) The proposal shall be published stating a time limit for submission of objections etc. of at least 12 weeks.

22.- (1) At the time of publication of a proposal for a national park plan this shall be submitted to the Minister for the Environment and other governmental, regional and municipal authorities the interests of which are affected by the proposal.

(2) The proposal shall also be submitted to

1) owners of properties who are affected by the proposal, and
2) the associations and organisations mentioned in section 30, which have asked the fund to be notified.

23.- (1) On expiry of the time limit in section 21(2), the national park fund may finally adopt the plan.

(2) If significant changes are made to the proposal for a national park plan after expiry of the time limit in section 21(2), the amended proposal shall be submitted for public debate for at least 8 weeks before the proposal can be finally adopted.

24.- (1) The national park fund shall publicly announce the national park plan as finally adopted. At the publication, appeals instructions and information on time limit for appeal shall be provided. The plan shall be made publicly available.
(2) At the time of publication, the Minister for the Environment and the authorities mentioned in section 22(1), and objections made pursuant to section 21(2) against the national park plan shall be informed.

25.(1) The national park fund shall revise the national park plan every six years. The time of revision shall be adjusted to the Natura 2000 planning under the Environmental Targets etc. Act to the effect that national park plans are revised no later than two years after adoption or revision of the Natura 2000 plan.

(2) As basis for the revision, the fund shall prepare and publish a report on the development of the national park, including an evaluation of results achieved in the previous planning period.

(3) In connection with revisions of national park plans, the regulation in this Part on preparation of national park plans shall apply.

(4) Where necessary, minor changes in the planning period may be established. In connection with minor changes, the fund may omit to follow the regulations laid down in section 20 on requesting ideas and proposals etc.

(5) If necessary, the fund may prepare an addendum to the national park plan in the planning period. The regulations on preparation of national park plans in this Part shall apply.

Part 6
Administrative provisions

26. The Minister for the Environment may decide or determine regulations on marketing of the national parks.

27.- (1) After consultation with the relevant minister, the Minister for the Environment may authorise a government authority set up under the auspices of the Ministry or other government authorities to exercise the powers vested in the Minister pursuant to this Act.

(2) The Minister for the Environment may lay down regulations on access to making appeals against decisions made pursuant to authorisation, including regulations that appeals may not be made.

(3) Furthermore, the Minister may lay down regulations on the exercise of such authorities that another government authority after consultation with the relevant minister has been authorised to exercise under subsection (1).

28. The Minister for the Environment may lay down regulations on the possibility of using digital communication within the scope of this Act, as well as further conditions in this respect.

Appeals etc.

29.- (1) Adoption of a national park plan by the national park fund may be appealed to the Nature Protection Board of Appeal in the event of issues of law.

(2) The other decisions of the national park fund may not be brought before another administrative authority.

(3) The Minister for the Environment may lay down regulations that appeals of issues of law in connection with decisions as mentioned in subsection (2) may be brought before the Nature Protection Board of Appeal, including regulations on granting a stay of execution of appeals as well as rights to appeal.

30.- (1) The Minister for the Environment and any other person(s) with legal interest in the decision shall have a right to appeal in decisions mentioned in section 29(1).

(2) The following shall also have a right to appeal

1) public authorities the interests of which are affected by the decision,
2) local and national associations and organisations with significant interest in the development and operation of the national park, and
3) national associations and organisations which, according to their purpose, manage significant recreational interests if the decision affects such interests.

(3) The Nature Protection Board of Appeal may stipulate that associations or organisations document their right to appeal by submitting their articles of association.
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31.-(1) Appeals under section 29(1) shall be submitted in writing within 4 weeks after publication of the plan. Appeals against a decision as mentioned in section 29(3) shall be submitted no later than 4 weeks after notification of the decision. If the time limit for appeal expires on a Saturday or public holiday, the time limit shall be extended to the next business day.

(2) An appeal shall be submitted to the national park fund which shall forward the appeal to the Nature Protection Board of Appeal accompanied by the appealed decision and the material included in the assessment of the case.

32. An appeal shall not have a stay of execution unless otherwise determined by the Nature Protection Board of Appeal.

33. The Minister for the Environment may lay down regulations on appeal fees.

Repayments and cancellation etc.

34.-(1) The national park fund may decide that commitments of grants be wholly or partly cancelled, that a grant shall be repaid or that a loan shall be cancelled if the grant conditions or terms are not complied with.

(2) The same shall apply correspondingly in the event of any false or misleading information provided, or if the grant recipient has omitted to provide information of importance to the fund’s decision.

35.-(1) The authority responsible for collection of outstanding amounts may collect the fund’s outstanding amounts pursuant to section 34 plus interests and costs, cf. subsection (2). Amounts payable may be collected by means of statutory debt collection and by withholding the grant recipient’s wages etc. Collection shall take place according to the regulations laid down in the Taxation at the Source Act (“Kildeskatteloven”) on collection of personal taxes.

(2) If the amounts mentioned in section 34 are not paid in due time, default interests of 1.3% may be charged per month from the due date. A lien shall be granted on interests accrued pursuant to the 1st clause.

Part 7
Closing down a national park fund

36. If a national park fund is closed down, the areas, buildings and installations and other assets of the fund shall be transferred to the state which shall subrogate to the rights and obligations of the fund.

Part 8
Entry into force and transitional provisions

37. This Act shall enter into force on 1 July 2007.

38. The following amendments shall be made to the Protection of Nature Act, cf. Consolidating Act no. 884 of 18 August 2004, as amended most recently by section 7 of Act no. 1571 of 20 December 2006:

1. In section 86(1), the following shall be inserted after no. 3 as a new number:
«4) an affected national park fund established according to the National Parks Act,«.
Nos. 4-6 shall hereafter become nos. 5-7.

2. In section 86(2), »nos. 5 and 6« shall be changed to: »nos. 6 and 7«.

39. The following amendments shall be made to the Planning Act, cf. Consolidating Act no. 883 of 18 August 2004, as amended most recently by section 9 of Act no. 1587 of 20 December 2006:

1. In section 25(1), », and to the affected national park fund established according to the National Parks Act« shall be inserted after »the proposals«.

2. In section 28 the following shall be inserted as subsection (4):
»(4). The provisions laid down in subsections (1)-(3) shall apply correspondingly in the event of objections from the affected national park fund under the regulations in section 29c.«

3. The following shall be inserted after section 29b:
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29c. The affected national park fund may make an objection pursuant to section 28 against a planning proposal, if such proposal has significant importance to the development of the national park.

4. In section 59(1), including a national park fund established pursuant to the National Parks Act shall be inserted after outcome.

40. The following amendments shall be made to the Watercourses Act (“lov om vandløb”), cf. Consolidating Act no. 882 of 18 August 2004, as amended most recently by section 8 of Act no. 1571 of 20 December 2006:

1. In section 84(1), no. 2 outcome of the case. shall be changed to outcome of the case and.

2. In section 84(1) the following shall be inserted as no. 3:

3) an affected national park fund established according to the National Parks Act.

41. The following amendments shall be made to the Mineral Resources Act, cf. Consolidating Act no. 886 of 18 August 2004, as amended most recently by section 10 of Act no. 1571 of 20 December 2006:

1. In section 12(2) nos. 3-6 shall be changed to nos. 4-7.

2. Section 15(1) shall be worded as follows:

Those with a right to appeal shall be

1) the receiver of the decision,
2) public authorities,
3) an affected national park fund established according to the National Parks Act,
4) local associations and organisations with significant interest in the decision,
5) national associations and organisations the main purpose of which is protection of nature and the environment,
6) national associations and organisations which, according to their purpose, manage significant recreational interests if the decision affects such interests.
7) any person(s) with individual significant interest in the decision.

3. In section 15(2), nos. 4 and 5 shall be changed to: nos. 5 and 6.

4. In section 26a(1) the following shall be inserted after no. 2 as a new number:

3) an affected national park fund established pursuant to the National Parks Act.

Nos. 3-8 shall hereafter become nos. 4-9.

5. In section 26a(3), nos. 4 and 5 shall be changed to: nos. 5 and 6.

42. The following amendments shall be made to Act no. 453 of 9 June 2004 on forestry, as amended most recently by section 14 of Act no. 1571 of 20 December 2006:

1. In section 62(2) the following shall be inserted as a new number:

1) an affected national park fund established pursuant to the National Parks Act.

Nos. 1-3 shall hereafter become nos. 2-4.

2. In section 62(3) nos. 1 and 2, shall be changed to nos. 2 and 3.

3. In section 62(3) etc. shall be inserted after the organisations.

43. This Act shall not apply to Greenland and the Faeroe Islands.

Christiansborg Slot, 6 June 2007

Under our Royal Hand and Seal

MARGRETHE R.

/Connie Hedegaard
Annex 15

Danish Statutory Order on National Park Wadden Sea, BEK nr 1159 of 30/09/.
Statutory Order on the Wadden Sea National Park

The following shall be laid down pursuant to section 3, section 7, section 8, section 14(6) and section 29(3) of Act no. 533 of 6 June 2007 on national parks:

Part 1
Purpose and scope

1.- (1) This Statutory Order shall establish the Wadden Sea National Park to strengthen and develop nature and includes regulations on the Wadden Sea National Park Fund.

(2) This Statutory Order comprises the areas shown in map sheet 1.

2. The purposes of establishing the Wadden Sea National Park are

1) to conserve, strengthen and develop nature, its diversity, cohesion and dynamics, particularly for shallow waters of international significance, tidal waters, salt meadows and other coastal nature areas,
2) to conserve and strengthen landscape and geological values in the unique Wadden Sea landscape,
3) to conserve and strengthen heritage values of the national park,
4) to improve the opportunities for exceptional nature and heritage experiences and outdoor activities in the Wadden Sea landscape,
5) to strengthen research, learning, nature awareness guidance as well as dissemination of the values of the Wadden Sea landscape,
6) to support developments benefiting local communities, including the business community, with respect for protective interests, and leaving room for continued operation and development of agriculture and fisheries and
7) to contribute to a coordinated development of the Danish/German/Dutch Wadden Sea area.

Part 2
Objectives for development of the national park

3. The Wadden Sea National Park shall be developed taking into consideration the safety of the local population and applying the following overall objectives:

1) The most important natural habitats, such as shallow waters, tideways, tidal waters, sand banks, small mouth rivers, salt meadows, sea shores and sand dunes shall be preserved, and their quality and diversity strengthened. Such natural habitats shall be protected against nutrient loads, invasive species, disturbance of fauna etc. and preserved as sustainable and dynamic eco-systems with natural dynamics, as far as possible by avoiding interventions in the natural dynamics of tidal waters.
2) Heritage nature areas, such as freshwater marshes and clay pits shall be preserved, and their quality and diversity strengthened, and agricultural operations which ensure the cultural landscape and the characteristic species of the area should be preserved and promoted.
3) The characteristic landscape elements and geological formations of the national park shall be preserved and made visible, and the dynamic landscape formation of sand dune and marshland areas shall be promoted.
4) Cultural environments and heritage elements and single sub-elements telling stories about the Wadden Sea shall be preserved, made visible and accessible, including coastal projection installations, drainage and irrigation systems, agriculture and buildings on mounds, marshland and geestland, hunting, fisheries and shipping, the history and of the border region and recreation.
5) The opportunities for outdoor activities, enjoyment of nature and heritage experiences shall be strengthened.
6) The development of outdoor activities and tourism shall be on a sustainable basis and in collaboration with the local population, the tourist industry and institutions providing information about the area.
7) Particularly vulnerable natural areas shall be protected against overuse and disruption by providing information and planning zones, tracks etc.
8) Nature awareness guidance and information about the landscape of the national park, values relating to nature and heritage as well as recreational opportunities shall be strengthened and developed in collaboration with local players through expansion and coordination of activities, establishment of service functions and facilities.
9) Research shall be supported and teaching shall be strengthened by establishing facilities and teaching programmes, including programmes promoting the awareness of children and young persons of nature, culture and the environment.
10) The development of the national park shall be in synergy with the surroundings.
11) The national park shall be developed in collaboration with the Trilateral Wadden Sea Cooperation.
12) The development of the national park shall be monitored and evaluated.
Part 3

The Wadden Sea National Park Fund

4. The objective of the Wadden Sea National Park Fund shall be to establish and develop the Wadden Sea National Park.

5.- (1) The Wadden Sea National Park Fund shall be managed by a widely composed board appointed by the Minister for the Environment. As far as possible, the members shall have local attachment.

(2) The Fund shall bear the costs for a secretariat, which assists the board in its work and carries out tasks in connection with the administration of the resources of the fund, planning and information etc.

6.- (1) The Wadden Sea National Park Fund shall prepare a national park plan for establishment and development of the national park, and the fund shall be instrumental in implementing this plan.

(2) The national park plan shall be adopted no later than 31 December 2012.

(3) The national park plan may not conflict with:

1) The Protection of the Outer Areas in Tønder Marsh Act (“Lov om beskyttelse af de ydre koge i Tøndermarsken”).

2) The Statutory Order on Conservation and a Wildlife Reserve in the Wadden Sea (“Bekendtgørelse om fredning og vildreservat i Vadehavet”).


(4) The fund shall ensure provision of information about the national park and involvement of the population in decisions pertaining to the planning, development and operation of the national park.

(5) The fund shall also carry out the other tasks of funds laid down in the National Parks Act.

7.- (1) The Wadden Sea National Park Fund shall set up a national park council for the Wadden Sea National Park which is to advise the board of the national park in matters of great significance and on questions of principle.

(2) The national park council shall be set up for a period corresponding to the tenure of the board.

8. In order to realise the national park plan mentioned in section 6, the Wadden Sea National Park Fund may, within the objectives of the national park, apply the instruments prescribed in section 14(1)-(5) of the National Parks Act.

Part 4

Administrative provisions and entry into force

9.- (1) The Wadden Sea National Park Fund may stipulate terms when entering into agreements on the provision of loans and grants etc. pursuant to section 14 of the National Parks Act.

(2) The fund shall ensure that grants and loans etc. be applied in accordance with the terms of the grant or loan.

(3) The fund may decide that commitments of grants be wholly or partly cancelled, that a grant shall be repaid or that a loan shall be cancelled if the grant conditions or terms are not complied with.

(4) The same shall apply where incorrect or misleading information has been provided, or where the recipient has withheld information of importance to the decision of the fund.

10. Adoption by the national park fund of a national park plan may, regarding legal questions, be appealed according to the regulations laid down in Part 6 of the National Parks Act.

11. This Statutory Order shall enter into force on 16 October 2010.

Ministry of the Environment, 30 September 2010

Karen Ellemann

/ Agnete Thomsen
While this translation was carried out by a professional translation agency, the text is to be regarded as an unofficial translation based on the latest official Statutory Order no. 1159 of 30 September 2010. Only the Danish document has legal validity.

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Map sheet 1
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Annex 16

Danish National Park Plan Wadden Sea
2013 – 2018
(only on DVD)
Designation of the Wadden Sea as Particularly Sensitive Sea Area (PSSA) by the International Maritime Organization, 2002.
REPORT OF THE MARINE ENVIRONMENT PROTECTION COMMITTEE ON ITS FORTY-EIGHTH SESSION

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7 IDENTIFICATION AND PROTECTION OF SPECIAL AREAS AND PARTICULARLY SENSITIVE SEA AREAS

Draft Guidance document for submission of PSSA proposals

7.1 The Committee recalled that, at MEPC 45, when developing the Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas, it agreed that some guidance on how to select the most appropriate regime for a given area of sea to be protected could be included in a supplementary document to the Guidelines.

7.2 The Committee also recalled that MEPC 47, in considering a document by the United States (MEPC 47/8/1) providing guidance to Member States, supported it in principle. However, MEPC 47 agreed that certain modifications should be made to it and the Secretariat was instructed to prepare a draft MEPC circular, based on the United States document for approval by the Committee at this session.

7.3 The Committee, having noted that the Secretariat had made changes to the draft MEPC circular “Guidance Document for Submission of PSSA Proposals to IMO” (MEPC 48/7/1) as instructed by MEPC 47 (MEPC 47/20, paragraph 8.18), agreed that it would be useful to appendix to the document a framework of what needs to be included in a proposal. The Committee requested the Secretariat to prepare the text of the appendix, using the headings and sub-headings of the Florida Key PSSA proposal submission (MEPC 46/6/2), which MEPC 46 agreed should serve as a model by Member States when proposing their PSSAs. Reference of the original document should be given.

7.4 In considering the draft MEPC Circular (MEPC 48/7/1), the Committee agreed to issue the Guidance Document with its appendix to be prepared by the Secretariat as MEPC/Circ.398.

Establishment of an Informal Group for reviewing PSSA and Special Area proposals

7.5 The Committee noted that there is a need for a mechanism to review PSSA and Special Area proposals to ensure that they meet the requirements of the Guidelines for identifying and designating PSSAs and for designating Special Areas (resolution A.927(22)).

7.6 The Committee recognized that, with the expected increase of new PSSA proposals being put forward to this Committee and given the limitation in the number of working groups allowed during any MEPC session, it is unrealistic to establish a MEPC working group every time when a new PSSA or a Special Area proposal is submitted.

7.7 The Committee agreed with the Chairman’s proposal to establish an Informal Group under the chairmanship of Mr. Paul Nelson (Australia) to:

.1 review the proposals for the marine area of the Paracas National Reserve and for the Wadden Sea to be designated as Particularly Sensitive Sea Areas (PSSAs) (MEPC 48/7 and MEPC 48/7/2), to determine whether they meet the provisions of the Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas (Annex 2 of resolution A.927(22));

.2 review the proposal to extend the “Gulfs area” as a Special Area under Annexes I and V of MARPOL 73/78, (MEPC 48/7/3 and MEPC 48/7/3/Corr.1), to
determine whether it meets the provisions of the Guidelines for the Designation of Special Areas under MARPOL 73/78 (Annex I of resolution A.927(22)); and

.3 provide a written report to the plenary outlining its findings.

Report of the Informal Working Group

7.8 The Committee, having received the report of the Group (MEPC 48/WP.14), noted the following:

.1 the Group examined each proposal against a checklist with 46 questions for PSSAs and 18 questions for Special Areas, covering all the criteria set out in resolution A.927(22);

.2 the Group reviewed the joint submission by Denmark, Germany and the Netherlands for the Wadden Sea to be designated as a PSSA (MEPC 48/7/2), and agreed that the submission included information on all applicable criteria, and that this information satisfied the requirements of those criteria. The Group recommended that, as IMO measures already exist to protect this area and there are no new measures requiring referral to any other Committee or Sub-Committee, MEPC take appropriate steps to designate the area as a PSSA;

.3 the Group reviewed the proposal by Peru for the Paracas National Reserve to be designated as a PSSA (MEPC 48/7) and agreed that all environmental criteria were satisfied. In response to concerns expressed by the Group regarding the need for more information on some criteria, in particular on the volume of traffic and hazardous cargoes, Peru provided additional information (annex 2 of MEPC 48/WP.14). The Group determined that this information satisfied the relevant criteria;

.4 the Group in considering the two associated protective measures proposed by Peru, namely an Area to be Avoided and a “no discharge” area, recommended that the Area to be Avoided should be referred to the NAV Sub-Committee for review. As regards the proposed “no discharge” area, prohibiting any kind of discharge from ships, the Group determined that the information provided was not sufficient to justify the approval of such an area at this session of the Committee;

.5 accordingly, in accordance with the Guidelines, the Group recommended that the Committee approve the Paracas National Reserve PSSA, in principle, pending consideration of the proposal for an Area to be Avoided by the NAV Sub-Committee on the basis of a separate submission by Peru;

.6 the Group noted the submission by Oman for the extension of the "Gulfs area" as a Special Area under Annexes I and V of MARPOL 73/78. Additional information on proposed amendments to MARPOL 73/78 and a chart, which are attached at annex 3 to MEPC 48/WP.14, as well as information provided orally to the Group, was provided by the delegation of Oman; and

.7 the Group agreed that further information was required to show that the discharge of garbage from ships, when operating in accordance with MARPOL 73/78, was a particular threat. Accordingly, the Group determined that the submission satisfies the requirements for Special Area status in respect of Annex I, but not Annex V of
MARPOL 73/78. The Group therefore recommended that the Oman Area of the Arabian Sea be designated as a Special Area under Annex I of MARPOL 73/78, as defined in the submission and annex 3 to document MEPC 48/WP.14, and that such Special Area would be distinct from the "Gulfs area" Special Area since it is in the Arabian Sea and outside the "Gulfs area".

Report of the Informal Working Group

7.9 Having considered the report of the Informal Working Group (MEPC 48/WP.14), the Committee:

.1 designated the Wadden Sea as a PSSA through the adoption of resolution MEPC.101(48), as attached at annex 5;

.2 referred the proposal for an Area to be avoided in the Paracas National Reserve to the NAV Sub-Committee for consideration;

.3 approved, in principle, the designation of Paracas National Reserve as a PSSA, pending consideration of the proposal for an Area to be Avoided by the NAV Sub-Committee; and

.4 approved the proposed amendments to MARPOL Annex I, with a view to designating the Oman area of the Arabian Sea as a Special Area under MARPOL Annex I, as set out in annex 6 and requested the Secretary-General to circulate the proposed amendments for adoption at MEPC 49.
ANNEX 5

RESOLUTION MEPC.101 (48)

Adopted on 11 October 2002

IDENTIFICATION OF THE WADDEN SEA AS A PARTICULARLY SENSITIVE SEA AREA

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

BEING AWARE of the ecological, social, economic, cultural, scientific and educational value of the Wadden Sea, as well as its vulnerability to damage by international shipping traffic and activities in the area and the steps taken by Denmark, Germany and the Netherlands to address that vulnerability,

NOTING that the Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas adopted under resolution A.927(22) set out procedures for the designation of particularly sensitive sea areas,

HAVING CONSIDERED the proposal from Denmark, Germany and the Netherlands to designate the Wadden Sea as a Particularly Sensitive Sea Area,

HAVING AGREED that criteria for identification of a Particularly Sensitive Sea Area provided in resolution A.927(22) are fulfilled for the Wadden Sea,

1. DESIGNATES the Wadden Sea as defined in Annexes 1, 2 and 3 to this resolution as a Particularly Sensitive Sea Area.
ANNEX 1

DESCRIPTION OF THE PARTICULARLY SENSITIVE SEA AREA
WADDEN SEA CO-ORDINATES

a. Description

In order to avoid the risk of pollution and damage to this exceptional, highly dynamic tidal ecosystem of world importance, mariners should exercise extreme care when navigating in the area bounded by a line connecting the following geographical positions which is designated as a Particularly Sensitive Sea Area and in the adjacent area:

The PSSA Wadden Sea is bordered:

Seawards: by an offshore line defined by a set of geographical co-ordinates (see co-ordinates listed under c.),

Landwards: by the main dikes, or where the main dikes are absent, by the spring-high-tide-water line, and in the rivers, by the brackish-water limit.

The inhabited islands are excluded from the PSSA. These islands are in:

Denmark: Rømø, Mandø, Fanø

Germany:


Hamburg: Neuwerk

Lower Saxony: Borkum, Juist, Norderney, Baltrum, Langeoog, Spiekeroog, Wangerooge

The Netherlands: Texel, Vlieland, Terschelling, Ameland, Schiermonnikoog
b. Illustrative overview

The illustrative overview shows the different parts (1-12) of the offshore line of the proposed PSSA Wadden Sea. The numbers and names pointing to the different parts refer to the list of co-ordinates given in the tables under c.
c. List of geographical co-ordinates (projection WGS84) for the bordering offshore line of the proposed PSSA Wadden Sea

**Denmark**

The proposed PSSA in the Danish Wadden Sea is divided into a northern part and a southern part by the Esbjerg Harbour shipping lane and the outer area of Esbjerg Harbour.

**Northern part (1)**

The PSSA delimitation consists of 28 points with the following coordinates from Blaavandshuk to the shore north of Esbjerg Harbour.

**Southern part (2)**

The PSSA delimitation consists of 17 points with the following coordinates, from the shore south of Esbjerg Harbour to the borderline between Denmark and Germany territorial waters.

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<th>Denmark, southern part</th>
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Germany

Below are the coordinates for the seven parts (3-9) representing the delimitation of the proposed PSSA for Germany.

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<td>8° 50.449'</td>
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<td>313</td>
<td>8° 50.617'</td>
<td>53° 53.316'</td>
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<td>314</td>
<td>8° 50.684'</td>
<td>53° 53.313'</td>
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<tr>
<td>315</td>
<td>8° 50.776'</td>
<td>53° 53.302'</td>
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### 3 Germany, Schleswig-Holstein

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<td>374</td>
<td>8° 55.641'</td>
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### 4 Germany, Lower Saxony, eastern Elbe part

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<tr>
<td>377</td>
<td>8° 32.150'</td>
<td>53° 56.167'</td>
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### 5 Germany, Hamburg National park

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<tr>
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<td>379</td>
<td>8° 26.31'</td>
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<td>380</td>
<td>8° 21.93'</td>
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<td>381</td>
<td>8° 18.90'</td>
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<tr>
<td>382</td>
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### 6 Germany, Lower Saxony, Wurster Küste

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<tr>
<td>386</td>
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<td>387</td>
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<td>388</td>
<td>8° 20.150'</td>
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<td>389</td>
<td>8° 23.583'</td>
<td>53° 40.663'</td>
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<tr>
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<tr>
<td>391</td>
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### 7 Germany, Lower Saxony, Weser-Jade area

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<td>394</td>
<td>8° 28.667'</td>
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### 8 Germany, Lower Saxony, Eastfrisia

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### 9 Germany, Lower Saxony, Dollard

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<tr>
<td>432</td>
<td>7° 11.513'</td>
<td>53° 18.863'</td>
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</table>
The Netherlands

Below are the co-ordinates representing the delimitation of the proposed PSSA for the Netherlands.

- Point 433 until 440 represent the eastern boundary, Ems Dollard, of the area (part 10).
- Point 441 until 453 represent the delimitation of the northern part of the area. It consists of the three nautical miles line from the baseline. Because this is a curved line, there are at least 1900 coordinates, but only some characterizing coordinates have been listed below. The map in annex 2 has been compiled on the basis of detailed information on the 3 nautical miles line (available from the Dienst der Hydrografie, the Hydrographical Service in the Hague, Netherlands) (part 11).
- Point 454 and 455 represent the western boundary of the area. It is the line from Den Helder towards the West, crossing the three nautical miles line (part 12).

| 10 The Netherlands, eastern boundary, Ems-Dollard  |
|---------|----------------|----------------|
| No.     | East           | North          |
| 433     | 7° 11,605'    | 53° 18,882'    |
| 434     | 7° 00,666'    | 53° 18,655'    |
| 435     | 6° 54,414'    | 53° 20,860'    |
| 436     | 6° 53,420'    | 53° 26,439'    |
| 437     | 6° 50,010'    | 53° 27,797'    |
| 438     | 6° 41,803'    | 53° 30,069'    |
| 439     | 6° 37,214'    | 53° 33,289'    |
| 440     | 6° 35,685'    | 53° 33,688'    |

| 11 The Netherlands, northern boundary  |
|---------|----------------|----------------|
| No.     | East           | North          |
| 441     | 6° 20,487'    | 53° 34,798'    |
| 442     | 6° 14,347'    | 53° 33,356'    |
| 443     | 6° 00,295'    | 53° 32,295'    |
| 444     | 5° 55,497'    | 53° 31,964'    |
| 445     | 5° 40,285'    | 53° 31,769'    |
| 446     | 5° 33,542'    | 53° 30,412'    |
| 447     | 5° 06,734'    | 53° 25,551'    |
| 448     | 5° 02,336'    | 53° 24,218'    |
| 449     | 5° 01,358'    | 53° 21,138'    |
| 450     | 4° 45,087'    | 53° 14,785'    |
| 451     | 4° 43,325'    | 53° 11,133'    |
| 452     | 4° 37,086'    | 53° 03,145'    |
| 453     | 4° 33,291'    | 52° 59,296'    |

| 12 The Netherlands, western boundary  |
|---------|----------------|----------------|
| No.     | East           | North          |
| 454     | 4° 43,056'    | 52° 56,841'    |
| 455     | 4° 35,221'    | 52° 56,364'    |
ANNEX 2

PSSA CHART
PROPOSED PARTICULARLY SENSITIVE SEA AREA

WADDEN SEA BOUNDARY

Reference: Nautical chart from Bundesamt für Seeschifffahrt und Hydrographie, BSH, Germany.
Nautical chart 1002, Edition 1991
[Coloured copies of the chart will be distributed at the meeting.]
ANNEX 3

EXISTING MEASURES

Measures adopted by IMO and at the national and EC levels

1 General measures

IMO measures

The IMO has issued numerous conventions to improve maritime safety and prevent pollution from ships, for example the International Regulations for Preventing Collisions at Sea, 1972 (as amended by Resolutions A.464 (XII), A.626 (15), A.678 (16) and A.736 (18)), COLREGs and SOLAS V.

EC measures

Also the European Union has already issued numerous Directives corresponding to IMO measures, including e.g. directives on port State control, marine equipment, notification obligations, and on the management of ship generated waste and cargo residues. These are continually being updated and implemented into national legislation.

According to the EC Habitat Directive (Council Directive 92/43/EEC) and the EC Bird Directive (Council Directive 79/409/EEC) Member States shall list areas of Community Interest respectively Special Protection Areas. These areas constitute the Natura 2000 network. Basically, the Wadden Sea, until 3 sea miles offshore except for the main shipping routes, has been listed as habitat areas according to the Habitat Directive and as Special Protection Areas according to the Bird Directive.

Other regional measures

Radio navigational warnings contain information that directly affects safety of life at sea and the protection of the environment. They are issued by NAVTEX, MRCC’s, VTS centers or other services.

Bilateral (NL & D) Local Rules and Traffic Regulations for the Ems estuary.
### NATIONAL MEASURES

<table>
<thead>
<tr>
<th>Denmark</th>
<th>Germany</th>
<th>Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>♦ Ministerial order on transfer of bunkers in the Danish territorial sea.</td>
<td>♦ Regulations on the navigation of Federal waterways in national parks in the North Sea area.</td>
<td>♦ Additional Local Rules and Regulations (BPR, &quot;Scheepvaartreglement Territoriale Zee&quot; (STZ)).</td>
</tr>
<tr>
<td></td>
<td>♦ Navigable Waterways Ordinance</td>
<td>♦ VTS available in certain areas.</td>
</tr>
<tr>
<td></td>
<td>♦ VTS available in certain areas.</td>
<td>♦ Pilotage services available for various ports.</td>
</tr>
<tr>
<td></td>
<td>♦ <strong>Pilotage services and Deep Sea Pilotage Services available for various ports and areas.</strong></td>
<td>♦ Communication facilities available.</td>
</tr>
<tr>
<td></td>
<td>♦ Modern aids to navigation (AIS, GPS, buoyage, lighthouses).</td>
<td>♦ Differential GPS available.</td>
</tr>
<tr>
<td></td>
<td>♦ SAR and MRCC services available.</td>
<td>♦ Buoyage available in entire area.</td>
</tr>
<tr>
<td></td>
<td>♦ Emergency towing capacity available.</td>
<td>♦ Lighthouses available on all major islands and along the mainland coastline.</td>
</tr>
<tr>
<td></td>
<td>♦ Deep Sea Pilotage Services available.</td>
<td>♦ SAR services available.</td>
</tr>
<tr>
<td></td>
<td>♦ Agreement with private companies on keeping helicopter capacity in reserve to permit action to be taken swiftly in the case of emergencies and accidents at sea.</td>
<td>♦ Salvage tugs available. Powerful salvage tug (m.s. &quot;WAKER&quot;) stand-by.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>♦ Deep Sea Pilotage Services available.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>♦ Numerous RACONs are available on (offshore) platforms and buoys.</td>
</tr>
</tbody>
</table>
II Collision avoidance, navigation, routing measures

IMO measures

IMO routeing schemes are in place in the North Sea to simplify traffic flows to reduce the collision hazard and to keep ships carrying certain dangerous or polluting goods away from the Wadden Sea coast. Traffic Separation Schemes in the concerned area adopted by the IMO are:

- At West Hinder - Off Brown Ridge
- Off Botney Ground - West Friesland
- East Friesland - Off Friesland
- North Hinder - Off Vlieland, Vlieland North and Friesland Junction
- Off Texel - In the approaches to Hook of Holland
- Jade Approach - German Bight Western Approach
- Terschelling-German Bight - In the approaches to river Elbe

The Deep-Water Route and Traffic Separation Scheme (TSS) from North Hinder to the German Bight via the Frisian Junction, is mandatory for the following classes of ships:

- Tankers of 10,000 GT + carrying oils as defined under Annex I of MARPOL 73/78;
- Ships of 5,000 GT+ carrying noxious liquid substances in bulk categories A or B of Annex II of MARPOL 73/78;
- Ships of 10,000 GT+ carrying noxious liquid substances in bulk categories C or D of Annex II of MARPOL 73/78; and
- Ships of 10,000 GT + carrying liquefied gases in bulk.

EC measures

Reference to paragraph V.

Other regional measures

None.

National measures

None.

III Pilotage, port entry and departure
IMO measures

Ships using the mandatory route for tankers from the North Hinder to the German Bight are recommended to use adequately qualified deep-sea pilots in the North Sea.

EC measures

European Directive 93/75/EEC requires the Master and Operator of vessels carrying dangerous or polluting goods to report cargo details entering or leaving EC ports.

Dangerous goods are defined in:

- The International Maritime Dangerous Goods (IMDG) Code
- The International Gas Carrier (IGC) Code
- The International Bulk Carrier (IBC) Code

Polluting goods are defined in MARPOL Annexes I, II & III.

European Directive 95/21/EEC (Port State Control)

Other regional measures

None.
## NATIONAL MEASURES

<table>
<thead>
<tr>
<th>Denmark</th>
<th>Germany</th>
<th>Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>♦ Pilotage is compulsory for the following:</td>
<td>♦ Compulsory district pilotage for:</td>
<td>♦ Radar surveillance at Den Helder, Terschelling and Schiermonnikoog (for port entry and departure and Wadden Sea traffic only).</td>
</tr>
<tr>
<td>- Loaded oil tankers &gt;1500 DWT;</td>
<td>- Vessels with a length of 90 m or a breadth of 13 m and more</td>
<td>♦ Harbour pilotage is compulsory for ships over 60m in length and for all vessels carrying oil, gas or chemicals. Voluntary deep-sea pilotage is available for ships required to use the North Hinder-German Bight mandatory route for tankers. Communications are normally carried out via VHF radio and ships are required to maintain a listening watch on VHF. Radar assistance is available on request in some ports. Pilotage is compulsory for Harlingen and other ports in the Wadden Sea.</td>
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<tr>
<td>- Loaded chemical tankers carrying dangerous liquid chemicals covered by the IMO Chemical Code;</td>
<td>- Tankers carrying gas/chemicals/petroleum/petroleum products in bulk, or unloaded tankers if not cleaned, degassed or completely inerted</td>
<td></td>
</tr>
<tr>
<td>- Gas carriers;</td>
<td>- Additional shore based pilotage:</td>
<td></td>
</tr>
<tr>
<td>- Vessels carrying radioactive cargoes;</td>
<td>- if visibility is reduced</td>
<td></td>
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<tr>
<td>- Towing vessels of 150GRT+ navigating in dredged channels or marked navigation channels, into or past harbours or pilot stations (excluding harbour maneuvers); and</td>
<td>- if pilot cutter is in a sheltered position</td>
<td></td>
</tr>
<tr>
<td>- Tankers with uncleaned tanks not secured by inert gas.</td>
<td>- if light buoys are withdrawn due to ice</td>
<td></td>
</tr>
<tr>
<td>♦ Ships sailing to and from Danish ports shall comply with the rules laid down in the &quot;Den danske havnelods&quot; (The Danish Harbor Pilot book).</td>
<td>- if requested by the master</td>
<td></td>
</tr>
<tr>
<td>♦ Tankers have to take a pilot when entering certain ports, terminals etc.</td>
<td>- if ordered by the VTS-authority</td>
<td></td>
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<tr>
<td></td>
<td>♦ Voluntary Deep sea pilotage available</td>
<td></td>
</tr>
</tbody>
</table>
IV Vessel traffic services (VTS)

IMO measures

None.

EC measures

None.

Other regional measures

None.

**NATIONAL MEASURES**

<table>
<thead>
<tr>
<th>Denmark</th>
<th>Germany</th>
<th>Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>No VTS arrangement in the area.</td>
<td>♦ VTS with permanent radar surveillance in following districts:  - VTS German Bight  - VTS Ems  - VTS Jade  - VTS Weser  - VTS Elbe  ♦ Services offered:  - Information Service  - Navigational Assistance Service  - Traffic Organisation Service  ♦ Mandatory for all vessels exceeding 50 m. of length (river Ems 40 m) and all vessels carrying certain dangerous goods</td>
<td>♦ VTS Den Helder: All vessels equipped with VHF are requested to participate in this system. Vessels within the area should report when entering and leaving the VTS area. Traffic surveillance is provided;  ♦ VTS Terschelling: Reporting is mandatory for all vessels entering or leaving the VTS area;  ♦ Wadden Sea Central Reporting Station: Is responsible for co-ordinating the relevant maritime authorities with regard to all incidents within the Wadden Sea area;  ♦ VTS Schiermannikoog: Provides radar surveillance services for the Terschelling-German Bight TSS with range up to 48 miles; and  ♦ VTS Delfzijl: VTS is mandatory for all vessels, which includes an information service.</td>
</tr>
</tbody>
</table>
V Environmental protection measures intended to reduce or combat pollution

IMO measures

Denmark, Germany and the Netherlands are Parties to MARPOL 73/78.

The designation of the North Sea and its coastal waters west of Great Britain and Ireland (North West European Waters) as a Special Area under MARPOL Annex I. This was implemented on a national level and entered into force in all three concerned countries.

The designation of the North Sea as a special area under MARPOL Annex V. Annex V entered into force in all three States concerned.

The designation of the North Sea as a Sox Emission Control Area under Annex VI of MARPOL 73/78 (not yet in force).

The 1990 London International Convention on Pollution Preparedness, Response and Co-operation (OPRC) promotes international co-operation in the event of a major oil pollution threat between all North Sea countries. The OPRC-HNS Protocol (not yet in force) establishes a framework for international co-operation in the event of incidents involving hazardous and noxious substances.

EC measures

Council Directive 93/75/ECC of 13 September 1993 concerning minimum requirements for vessels bound for or leaving Community ports and carrying dangerous or polluting goods (known as the HAZMAT Directive) has been in force since 1995.

The EC Directive 2000/59/EEC on port reception facilities for ship-generated waste and cargo residues, which entered into force in 2000, should be implemented by the concerned States by the end of 2002. It is the aim of the Directive to reduce the discharges of ship-generated waste and cargo residue into the sea, especially discharges, from ships using ports in the Community, by improving the availability and use of port reception facilities for ship-generated waste and cargo residues.

The EC Directive 1999/32/EC relating to a reduction in the sulphur content of certain liquid fuels.

As a follow up to the Erika incident, two other packages of measures are in the legislative procedure. Package 'Erika I' is completed and contains the following elements:

- further development of Port State Control;
- strengthening of provisions for and the control of Classification Societies;
- initiative for early phasing out of single hull tankers, mentioned in paragraph 8 above and being implemented in the EU by a regulation.

The proposals concerning package 'Erika II', passed on to the Council on 8 December 2000, consist of the following elements:

- setting up a common monitoring and information system for maritime traffic, which will in due course replace EC-directive 93/75/EEC;
- initiative for an additional compensation fund for damage by oil pollution;
- establishment of the European Maritime Safety Agency (EMSA).

Other regional measures

Bonn Agreement: basic agreement for co-operation in dealing with Pollution of the North Sea by Oil and other Harmful Substances. Close co-operation between B, DK, F, D, NL, N, S and UK. Zones of responsibility are established under the Bonn Agreement, for co-operation in terms of aerial surveillance and dealing with pollution of the North Sea by oil and other harmful substances.

Joint Maritime Contingency Plans on Combating Oil and Other Harmful Substances agreed between D and DK resp. NL (DENERG resp. NETHGER-Plans), concerning bilateral co-operation especially in defined exterior and quick Response Zones.

Bilateral Administrative Agreements between D and DK resp. NL on co-operation in the field of aerial surveillance (coordination of flight times and corridors, joint flights, mutual assistance by aircraft of the other party).

Bilateral arrangements also apply between the Wadden Sea states in terms of Joint Maritime Contingency Plans.

D-NL-Memorandum of Understanding on Mutual Support in the Field of North Sea Emergency Towing Capacity (March 2000): mutual assistance by emergency towing vessels in an area between the outer limitation of the VTS-schemes and the coastline, incl. approaches to the seaports.

National measures

There are lots of different national measures regarding preventing and combating marine pollution.
Annex 18

Regional declarations supporting the nomination.
Fælleserklæring om proces for ansøgning om optagelse af Vadehavet på UNESCOs liste over Verdensarv

Miljøministeren, byrådene i Esbjerg, Fanø og Varde og bestyrelsen for Nationalpark Vadehavet er enige om at anmode kulturministeren om at indstille Vadehavet til optagelse på UNESCOs liste over verdensarv.


Verdensarvsområdet følger den grænse som afgrænser det eksisterende beskyttelsesområde, Natur og Vildtreservat Vadehavet, og som er det beskyttelsesområde der indgår i det Trilaterale Vadehavssamarbejde, dog med visse undtagelser som fremgår af nedenstående bilag og kort.

Ida Auken
Miljøminister

Johnny Søtrup
Borgmester
Esbjerg Kommune

Erik Nørreby
Borgmester
Fanø Kommune

Gylling Haahr
Borgmester
Varde Kommune

Bent Poulsen
Formand
Nationalpark Vadehavet

435/450
Bilag til Fælleserklæring

Undtagelser for afgrænsningen, hvor denne ikke følger Natur- og Vildtreservatet:

- Et ca. 20 ha stort område ved Rømø Havn, hvortil Tønder Kommune har en eksisterende planlægningstilladelse til en udvidelse af havnen. Tilladelsen er givet på vilkår om, der etableres erstatningsnatur.
- Landbrugsområdet Margrethe Kog nord for slusevejen, i alt 266 ha, fordi områdets anvendelse anses for uforenelig med den nødvendige beskyttelse.
- Det militære skyderterræn på Rømøs nordspids på 43 ha. Undtagelsen dækker kun det egentlige øvelsesområde, og ikke den omkringliggende sikkerhedszone.
Afgrænsning af Vadehavet som verdensnaturlav

December 2012
Natursynsæt, Vadehavet
Skovridervej 3, 6510 Gram

437/450
Declaration of support for the application for nomination of the Danish Wadden Sea for the UNESCO list of World Heritage

The Minister for the Environment, the municipality councils in Esbjerg, Fanø and Varde, and the Wadden Sea National Park agree to request the Minister of Culture to nominate the Danish part of the Wadden Sea for designation as UNESCO World Heritage Site.

The parties recognise the outstanding universal value of the Wadden Sea and also recognise the protection measures that are effective in the Wadden Sea. The parties at the same time acknowledge that the application for nomination is an extension of the Dutch and German inscription as world heritage and as such acknowledge the principles that form the basis for the nomination.

With reference to letter from the Minister for the Environment by the 20 September 2012 to the municipalities and the agriculture organisations it is reiterated that the nomination will not entail any changes to the current restrictions on utilization of the area. For example remains the conditions unchanged under which preservation of the dykes, regulation of the water level behind the dykes and requisite measures for the maintenance of channels to the harbours are possible. The objective of UNESCO is to approve that the current protection measures comply with the requirements of UNESCO for nomination as world heritage. UNESCO does not represent an additional level of administration with the authority to demand additional regulations. This means that future regulations of the protection measures in the Danish part of the Wadden Sea remains a matter for the Danish authorities.

The delimitation of the nominated property follows the delimitation of the existing protection area under the Statutory Order on Conservation and a Wildlife Reserve in the Wadden Sea. This area is also the Trilateral Conservation Area, yet with minor exceptions listed in the annex and the enclosed map.

[Signed by the Minister of the Environment, Majors of Esbjerg, Fanø and Varde Municipalities and the chair of the National Park Wadden Sea]

Annex to the Declaration of support

Exceptions from the delimitation of the Statutory Order on Conservation and a Wildlife Reserve in the Wadden Sea:

- The channel to Esbjerg Harbour, which is not designated as Natura 2000 like the rest of the area. The southern delimitation of the area close to Esbjerg Harbour also follows the Natura2000 designation.
- An approx. 20 ha. area connected to Rømø Harbour. Tønder municipality holds a planning permit for extension of the harbour activities. The planning permit is given under the condition that nature restoration will be established.
- A rural area with agriculture production in Margrethe Kog north of Slusevej, in total 266 ha. The utilization of the area is considered to be incompatible with the required protection for nomination as world heritage.
- The military exercise area of 43 ha. on the northern part of Rømø. The exception is only the exercise area, and does not include the surrounding security zone.
Erweiterung des UNESCO-Weltnaturerbes Wattenmeer in Niedersachsen

Sehr geehrter Herr Minister Dr. Birkner,


Mit der Anerkennung des Wattenmeeres als UNESCO-Weltnaturerbe 2009 haben die Aufmerksamkeit und das Interesse für diesen Lebensraum spürbar zugenommen. Hier von profitieren nicht nur die Natur im Wattenmeer sondern auch die heimische Wirtschaft und somit auch die Menschen, die in der Region leben und arbeiten.

Die jetzige Erweiterung und die damit verbundene Abgrenzung ist ein gelungenes Beispiel für eine verantwortungsvolle Zusammenarbeit von Naturschutz und wirtschaftlichen Interessen, welche dem herausragenden universellen Wert (Outstanding Universal Value) des Gebietes gerecht wird.

Mit freundlichen Grüßen

[Unterschrift]

Bielefeld
Annex 19

Image inventory list.
## Annex 19 Photo list Denmark and Niedersachsen

<table>
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