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# Stade Declaration

## Trilateral

## Wadden Sea Plan



*Ministerial Declaration of the  
Eighth Trilateral Governmental Conference  
on the Protection of the Wadden Sea*

*Stade, October 22, 1997*



# Foreword

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The adoption of the Stade Declaration and the Wadden Sea Plan mark two decades of nature cooperation between The Netherlands, Germany and Denmark. It is a token of twenty years of joint responsibility for the protection of a nature area of outstanding importance, both national and international.

During the first decade of the trilateral Wadden Sea Cooperation the emphasis was on the protection of birds and seals.

By the end of the eighties a start was made with a more integrated approach to nature conservation. At the 6th Governmental Wadden Sea Conference, Esbjerg 1991, the whole range of human activities in the Wadden Sea was addressed. Three years later, at the Leeuwarden Conference, the regulation of human use was embedded in a system of ecological targets for all typical Wadden Sea habitats.

The adoption by the 8th Wadden Sea Conference in Stade, Germany, 1997, of the Stade Declaration and the Trilateral Wadden Sea Plan, may be valued as the accumulated achievement of almost twenty years of political cooperation on international nature conservation.

The Stade Conference is at the same time the starting point of a new phase in the trilateral Wadden Sea Cooperation which will be dedicated to the integration of nature conservation and human use on the basis of the common Targets and the catalogue of measures for achieving the Targets as laid down in the Trilateral Wadden Sea Plan.

The active involvement of all stakeholders in this process is one of the major challenges for the years to come. Our efforts to protect and develop the area in a sustainable way can only succeed if all those who work and live in the area, are committed to this objective.

A start with this involvement was made during the public discussions accompanying the preparation of the Wadden Sea Plan. We thank all those who have actively taken part in these discussions.

Angela Merkel

Svend Auken

Josias van Aartsen



# Stade Declaration

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The MINISTERS responsible for the protection of the Wadden Sea Area<sup>1</sup> of Denmark, The Netherlands and the Federal Republic of Germany met at the 8th Trilateral Governmental Conference on the Protection of the Wadden Sea (the Stade Conference) in Stade on 22 October 1997 to reinforce, further develop and enhance their joint cooperation, building upon the agreements made at previous Wadden Sea Conferences, in particular, at the Esbjerg Conference, 1991, and the Leeuwarden Conference, 1994.

They note the progress made in the protection of the Wadden Sea since the Leeuwarden Conference in 1994 as entailed in the Progress Report. They reaffirm that efforts must continuously be made to conserve and protect the area for coming generations in accordance with AGENDA 21<sup>2</sup> and the Convention on Biological Diversity and that the implementation of agreed policies and measures must be undertaken in dialog with the stakeholders.

The Wadden Sea Area is an area of outstanding ecological importance. They acknowledge their global responsibility for this area. The Wadden Sea Area is also an area where people live, work and recreate. Safety of the inhabitants is of utmost importance. Conditions for sustainable economic developments must be maintained.

There is a close interrelationship between the Wadden Sea Area and its surroundings. On the one hand, areas adjacent to the Wadden Sea Area can benefit from the values of the Wadden Sea. On the other hand, developments and activities outside the Wadden Sea Area may have an impact on the values of the Wadden Sea Area. The benefits should be improved and the negative impacts addressed.

They acknowledge the statements submitted by the non-governmental organisations, the Joint Statement of the Dutch-German-Danish Wadden Sea Advisory Councils, the Joint Statement of the Inter-regional Wadden Sea Cooperation and the common resolutions of the Dutch-German-Danish Wadden Sea Island Cooperation as valuable contributions to inspire, stimulate and advance the Trilateral Wadden Sea Cooperation.

They appreciate the efforts made by the Inter-regional Wadden Sea Cooperation to contribute to the work of the trilateral cooperation, in particular, with regard to the issues of environmental impact assessment and sustainable tourism and acknowledge that the close collaboration has been of mutual benefit.

<sup>1</sup> The Wadden Sea Area is the Trilateral Area of Cooperation as defined in §9 of the Leeuwarden Declaration.

<sup>2</sup> Chapter 17 on the "Protection of oceans, all kinds of seas, including semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources" and chapter 15 on the "Conservation of biological diversity".

They appreciate the work carried out so far by the QSR Group in preparing the Wadden Sea Quality Status Report and take note of the assessment of the Wadden Sea ecosystem as entailed in the Assessment Report.

The Ministers, in the exercise of their political responsibilities, AGREE on the following<sup>3</sup>:

## Wadden Sea Plan

- 1 The Ministers AGREE to adopt the Wadden Sea Plan in Annex I, elaborated in accordance with the Leeuwarden Declaration, entailing the common policies, measures, projects and actions of the countries for their joint efforts to fulfill the Targets.
- 2 The Ministers AGREE to consider and, where necessary, amend the Wadden Sea Plan at the next Trilateral Wadden Sea Conference in accordance with the procedure outlined in the Plan and the Leeuwarden Declaration.
- 3 The Ministers ACKNOWLEDGE that the success of implementing the Wadden Sea Plan, a.o., depends on the extent to which relevant authorities, interest groups and local citizens contribute to the realization of the policies and measures.
- 4 Inhabitants, users, visitors and all stakeholders in the Wadden Sea region are invited to provide their ideas and inputs through the Wadden Sea Plan to the implementation of the Targets.
- 5 The Ministers URGE the competent national authorities to maintain or intensify their cooperative dialogue with all stakeholders involved, in order to promote public acceptance of the Wadden Sea Plan and thus to promote the idea of sustainable use of the natural resources of the Wadden Sea Area, for the long-term benefit of everyone living and working in the Wadden Sea Area. This includes the information of the local population in the national languages.
- 6 The Ministers WELCOME the suggestions presented during the Conference and the resolutions of the non-governmental organisations, the Dutch-German-Danish Wadden Sea Advisory Councils, the Inter-regional Wadden Sea Cooperation and the Dutch-Danish Wadden Sea Island Cooperation and EMPHASIZE that these suggestions should be further taken into consideration in the above mentioned dialogue with all stakeholders.
- 7 The Ministers RECOGNIZE the important contribution different types of co-management schemes can make in appropriate circumstances, at various levels and in many aspects of Wadden Sea management and WELCOME further research in this field.
- 8 The Ministers STRESS the fundamental need to protect the local population against storm floods and they take care that the implementation of the Wadden Sea Plan will not impair safety standards.
- 9 The Ministers ACKNOWLEDGE the responsibility of the Wadden Sea States to maintain the safety on international and national shipping routes and they ENCOURAGE the competent authorities, which are responsible for safe and easy access to sea ports and their management, to take into account the recommendations of the Wadden Sea Plan.

<sup>3</sup> Throughout this Declaration the term 'agree' is to be understood as defined in this paragraph.

10 The Ministers URGE the competent national authorities to exchange views and to communicate with all stakeholders involved in the implementation of the Wadden Sea Plan, and they EXPECT the local population and local communities to be actively involved in the formulation of proposals, which will be taken into consideration at the next Wadden Sea Conference and which will improve and bring the Wadden Sea Plan up-to-date.

11 The Ministers AGREE that the implementation of the Wadden Sea Plan will be evaluated and assessed carefully during the coming years and that a progress report be submitted to the next Wadden Sea Conference, providing the basis for the further development of the Wadden Sea Plan. Special consideration should be given to the islands in the Wadden Sea Area. The Ministers PUT their senior officials IN CHARGE of supervising the assessment and evaluation of the implementation of the Plan.

12 The Ministers REGARD the Wadden Sea Plan as a good example of international cooperation on a shared nature area and ENDORSE its submission to appropriate international conferences in the field of environmental and nature cooperation.

## External Impacts

13 The Ministers HIGHLIGHT the fact that the quality of the Wadden Sea Area may be influenced significantly by activities taking place outside or pollution stemming from sources outside the Wadden Sea Area. The Ministers REGARD the large areas of "black spots" in the East Frisian Wadden Sea during 1996 as a sign of impairment of the decomposition capacity of the benthic system, one of the major functions of the Wadden Sea ecosystem. The Ministers, therefore, AGREE that the three countries will join their efforts within international fora, as well as, in negotiations with other parties towards fulfilling the following goals:

### Reduction of inputs of nutrients, hazardous substances and oil

14 They RECOGNIZE the importance of the catchment areas of the debouching rivers for the quality of water, sediment and marine habitats and ACKNOWLEDGE that the total load of hazardous substances and phosphorus compounds entering the Wadden Sea Area via the rivers has been reduced considerably during the last 10 years but that oil pollution from shipping is still a problem.

15 They INSIST that the total load of nutrients entering the Wadden Sea Area must be reduced significantly. Existing international agreements and EU regulations in this field must be implemented rigorously. Especially important are the following measures:

- to equip, as soon as possible, waste water treatment plants in the catchment area of the North Sea and Wadden Sea with nutrient treatment stages;
- to promote extensification of agricultural practices - also through EU-programs - and to reduce ammonia emissions from agriculture;
- to reduce emissions from traffic.

16 They UNDERLINE that the reduction of inputs of hazardous substances and oil needs to be continued and that specific efforts need to be undertaken in the adjacent ports and in all river systems entering the Wadden Sea. The pollution, especially by oil from shipping, needs further reduction, in particular, by providing cost effective and customer-friendly port reception facilities.

## Activities in the adjacent area

17 They strongly URGE all competent authorities to consider the common interests of the Wadden Sea Area and to reduce, where this is necessary, the environmental impacts of, in particular, harbor and industrial facilities, recreation, civil air traffic, military activities, wind energy, agriculture and traffic, inter alia by taking specifically into account, in EIA procedures, the needs of the Wadden Sea ecosystem, the Common Principles and relevant EU Directives. Moreover, in dealing with such activities and in applying relevant national and EU regulations, decision makers should strive for both a net social benefit and a net positive ecological outcome.

## EC Bird and Habitat Directives

18 The Ministers NOTE that major parts of the Wadden Sea Area have been listed as a habitat area by the competent authorities in accordance with Art. 4 of the EC Habitat Directive and/or Art. 4 of the EC Bird Directive and that the list has been transmitted to the European Commission. The Schleswig-Holstein part of the Wadden Sea has also been prepared to be nominated as Special Protection Area under the EC Bird Directive as the last remaining part of the Wadden Sea Area. A majority of the Wadden Sea Area is hence, now part of NATURA 2000.

19 The Ministers RECOGNIZE that there are differences in the delimitations of the listed areas and, therefore, AGREE to work further towards a more coherent Natura 2000 area for the Wadden Sea.

## Trilateral Monitoring and Assessment Program

20 The Ministers APPRECIATE the work exercised by the Trilateral Monitoring and Assessment Working Group (TMAG) in elaborating the report on the "Implementation of the Trilateral Monitoring and Assessment Program (TMAP)" in fulfillment of §67 of the Leeuwarden Declaration. The work has been carried out in the framework of the DEMOWAD-project co-financed by the European Commission under the LIFE Program.

21 The Ministers AGREE to implement the common package of parameters as in Annex 2 and, to this end, establish, as soon as possible, the necessary financial and organizational preconditions for its implementation, including the associated data management.

22 The Ministers AGREE to an evaluation of experiences with this common package at the next Wadden Sea Conference.

## Particularly Sensitive Sea Area Wadden Sea

23 The Ministers NOTE the progress being made within the International Maritime Organization (IMO) to reduce the environmental impact of shipping on sensitive sea areas like the Wadden Sea, especially with the mandatory routing measures for oil- and chemical tankers off the Dutch and German Wadden Sea coast.

24 The Ministers NOTE that all relevant measures have been taken inside the Wadden Sea Area or in the adjacent area according to the conditions for Particularly Sensitive Sea Areas (PSSAs) as required by the IMO.

25 The Ministers ENDORSE a study on the possibilities for a proposal to the IMO to designate the Wadden Sea and an adjacent zone as Particularly Sensitive Sea Area (PSSA).

## **Environmental Impact Assessment**

26 The Ministers WELCOME the work carried out by the Interregional Wadden Sea Cooperation (IRWC) pursuant to §§ 26-27 of the Leeuwarden Declaration and its decisions with regard to Environmental Impact Assessments (EIAs).

27 The Ministers INVITE relevant competent authorities, when deciding on thresholds and/or criteria for Annex II projects of EC Directive 97/11/EEC, to give special consideration to the significant effects these projects are likely to have on the Wadden Sea Area.

28 The Ministers AGREE on their intention, when applying the information and consultation procedures of the ECE Convention on Environmental Impact Assessment in a Transboundary Context, to consider the specific vulnerability of the Wadden Sea Area.

29 The Ministers RECOMMEND that in the assessment of plans and projects in the Wadden Sea Area, alternatives should be considered following the EC Habitat Directive. In this context social and economic aspects should be taken into account, as appropriate.

## **International Cooperation**

### **The Wash - Wadden Sea Cooperation**

30 The Ministers AGREE to continue to cooperate by establishing projects in the field of exchange of information and experiences on monitoring, management of the common seal population and on establishing an improved collaboration between management authorities.

### **Guinea Bissau - Wadden Sea Cooperation**

31 The Ministers AGREE to continue the collaboration in the context of the Memorandum of Intent by signing a new three-year work program as in Annex 3 which continues and builds upon the experiences and results of the first work program with the aim of finalizing the training of an ornithological team and to establish an organization to support and further develop management and public awareness in the area.

### **Brent Goose Management Plan**

32 The Ministers INVITE The Netherlands to proceed with finalizing the preparation of the International Management Plan for the Brent Goose and prepare the drafts and attached actions for decisions by the First Meeting of the African-Eurasian Waterbird Agreement (AEWA).

## Conservation of Seals and Small Cetaceans

33 The Ministers ACKNOWLEDGE the Conservation and Management Plan for the Wadden Sea Seal Population 1996-2000 elaborated and endorsed in the framework of the Seal Agreement as being the elaboration of the Targets on Common and Grey Seals entailed in the Wadden Sea Plan.

34 The Ministers WELCOME that a network will be organized for the collection of information on by-catch of harbor porpoises in the framework of the Agreement on Small Cetaceans of the Baltic and the North Sea (ASCOBANS) which is also relevant for the Wadden Sea Area and the area seaward of the Wadden Sea Area.

## Cooperation in the Field of Public Information

35 The Ministers AGREE to explore possibilities to enhance the quality of public participation and WELCOME the initiative of The Netherlands to organize a workshop for that purpose.

## Tourism Development

36 The Ministers ACKNOWLEDGE the work carried out by the Inter-regional Wadden Sea Cooperation regarding the analysis and visions of sustainable tourism development and recreational use in the Wadden Sea region.

The Ministers AGREE to initiate interregional cooperation to develop and implement policies on sustainable tourism, together with relevant stakeholders, as well as, local and other relevant authorities. They INVITE the Inter-regional Wadden Sea Cooperation to carry out this task.

## Cultural Heritage

37 The Ministers TAKE NOTE of the results of the workshop on Cultural Heritage held in Ribe, Denmark and DECIDE that the planned mapping of cultural heritage in the Wadden Sea Area will be extended to relevant adjacent parts of the Wadden Sea Area.

## Future Cooperation

### Scientific Wadden Sea Symposium

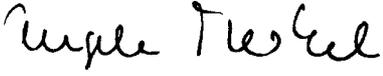
38 The 10th International Scientific Wadden Sea Symposium will be held at the invitation of the Dutch Government.

### 9th Wadden Sea Conference

39 Denmark will chair the cooperation from January 1, 1998. The 9th Wadden Sea Conference will be held in Denmark in 2001.

## Signatures

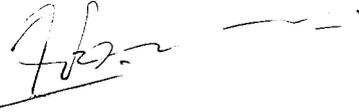
*For the Government of the Federal Republic of Germany*

Dr. A. Merkel 

*For the Government of the Kingdom of Denmark*

S. Auken 

*For the Government of the Kingdom of The Netherlands*

J.F. de Leeuw 



# Annex I

## Trilateral Wadden Sea Plan

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# Preface

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## The Wadden Sea: into the next Millennium

1 The Wadden Sea is an area of outstanding natural value. It is characterized by a high biological productivity and high natural dynamics. The Wadden Sea is the largest European wetland area and its tidal flats form the largest unbroken stretch of mudflats worldwide.

2 The Wadden Sea area has been inhabited for thousands of years. In the beginning, the population lived mainly from hunting and fishery. Together with permanent settling and the development of agriculture, land reclamation became an important activity. In the course of the last century, and especially since the end of World War II, the influence of humans has increased with growing technical possibilities and economical opportunities. The Wadden Sea is an area where people live, work and recreate.

3 It is only 30 years ago that there were serious plans to embank substantial parts of the Wadden Sea for agricultural purposes. Nowadays, it is a common understanding that the Wadden Sea is an area with unique natural values which are the basis for livelihood of the local people, tourism, recreation and other activities.

4 At the beginning of the 1970s, national and international policies for combatting chemical pollution of the sea started. Since then, a considerable shift in thinking occurred which resulted in substantial improvements in the quality of the water and sediment.

5 This shift in thinking started at the beginning of the century through the pioneer work of concerned citizens and non-governmental organizations who founded protected colonies for birds. Still, it has taken almost 70 years before the official awareness of the importance of the area resulted in effective nature protection. Central, regional and local governments and interest groups have played an important role here, although they have often been criticized.

6 Almost 20 years ago, a process began which resulted in the protection and conservation of the entire Wadden Sea with nature reserves and national parks and the establishment and extension of the trilateral Wadden Sea cooperation between The Netherlands, Germany and Denmark. In parallel, parts of the area were designated as Wetlands of International Importance (Ramsar Areas), Bird and Habitat Directives areas and as Man and Biosphere (MAB) Reserves.

7 The Wadden Sea is a coastal sea and there are many interactions with the North Sea and the northwestern European mainland. The quality of water, sediment and marine habitats of the Wadden Sea is to an important degree affected by the North Sea and activities in the catchment area of the debouching rivers. The Wadden Sea is an important nursery area for North Sea fish and some species of marine mammals. For these reasons, the trilateral policy and management regarding pollution and species and habitat protection issues have been, and are, closely related

## International Designations

(see maps in Appendix I)

### A. Legally binding EC Directives

1. The Council Directive 79/409/EEC 1979 (EC Bird Directive) aims at the protection of all species of naturally occurring birds in the territory of the member states. According to the Bird Directive, member states shall classify the most suitable territories for the conservation of these species, including migratory species, as special protection areas (SPAs). The Dutch part of the Conservation Area<sup>1</sup> has been designated as SPA. In Germany, the Lower Saxony part of the Conservation Area has been designated as SPA, as well as, the islands of Scharhörn and Neuwerk and the Schleswig-Holstein Wadden Sea National Park and five adjacent areas. The designation of the Hamburg Wadden Sea National Park is under preparation. In Denmark, the Danish part of the Conservation Area, with the exception of the shipping lane from the North Sea to Esbjerg, the uninhabited parts of the islands and the adjacent marsh areas on the mainland have been designated as SPAs
2. The Council Directive 92/43/EEC 1992 (EC Habitat Directive) aims at the conservation of habitats of wild flora and fauna in the member states. In the framework of the Habitat Directive, a coherent ecological network, called NATURA 2000, shall be established. NATURA 2000 will consist of Special Areas of Conservation (SACs) designated according to the Habitat Directive, and the SPAs of the Bird Directive. The designation of SACs will be undertaken in the forthcoming years and major parts of the Wadden Sea will be included in NATURA 2000.

### B. International Conventions and Programs

3. The Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1971 (Ramsar Convention) is a world wide treaty for the conservation of wetlands: shallow open waters and any land regularly or intermittently covered or saturated by water. In the framework of the Convention, wetlands of international importance are designated by the contracting parties. Major parts of the Wadden Sea have been designated as Ramsar sites: The Dutch part of the Conservation Area is a Ramsar site. In Germany, the Wadden Sea Ramsar sites are basically the national parks and a number of areas on the islands and the adjacent mainland. In Denmark, the Wadden Sea Ramsar site consist of the uninhabited parts of islands, adjacent marsh areas on the mainland and the Danish part of the Conservation Area, except for the shipping lane from the North Sea to Esbjerg and the Esbjerg harbor.
4. Man and Biosphere Reserves (MAB) 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 German and the Dutch parts of the Conservation Area have been designated as Man and Biosphere Reserves.

<sup>1</sup>The Conservation Area consists of the trilateral areas of conservation as defined in §10 of the Leeuwarden Declaration

to developments within the framework of the North Sea Conferences, the Oslo and Paris Conventions and, in their succession, the Convention for the Protection of the Marine Environment of the northeast Atlantic (OSPAR Convention 1992), which is expected to be ratified in the near future, and the International Maritime Organization (IMO).

8 Through these national and international designations and treaties, the Wadden Sea has obtained an extended and comprehensive protection status. The protection schemes and arrangements resulting from these designations, can be regarded as a start of the implementation of the commitments emerging from the Convention on Biological Diversity and Agenda 21. They are also the basis for the present and future sustainable use and development of the Wadden Sea region.

9 It is often argued nowadays that “we have done enough for nature” and even that the Wadden Sea is overprotected. The many rules and regulations, however, directly reflect the many claims to use the Wadden Sea. These claims are often as relevant as a decade ago and, in a number of cases, even more serious. Land reclamation will not be carried out again and the reduction of pollution is a highly relevant political issue but intensified impacts and conflicts may be expected from, amongst others, gas exploration and exploitation, wind energy, deepening of estuaries and coastal protection, in light of the increased sea level rise.

10 Moreover, we are dealing with a system which reflects past impacts. Land reclamation, for example, has reduced the size of the area which again has reduced the ability of the system to deal with an accelerated sea level rise. The occurrence of black spots in the Lower Saxony Wadden Sea is an indication of accumulated organic material resulting from eutrophication. Also, the high number of threatened habitats, as indicated in red lists, must be reduced to achieve the full scale of habitat types which belong to a natural and dynamic Wadden Sea.

11 The Targets, which are the focal point of this document, reflect both the need for a recovery of the natural values of the Wadden Sea ecosystem and the necessity that human activities in the area must also be possible in the future. The Targets make clear that an increase of natural and undisturbed habitats all over the Wadden Sea is a condition for the restoration of the ecosystem. The Targets have been formulated in an open-end way, although the direction towards the desired situation is given. This means that there is room for negotiation, both from the user and the nature protection sides.

12 At the same time, it is a precondition that sustainable human activities in the area remain possible in the future. Sustainable development also has to take into account the needs and requirements of the population, e.g. coastal protection measures, management of shipping routes, energy supply, agriculture, fishery, tourism, infrastructure and internal and external security.

13 Through this Plan, inhabitants, users, visitors and all stakeholders in the Wadden Sea region are invited to provide their ideas and inputs to the implementation of the Targets.

## The Shared vision

14 The Targets feature a shared vision of the Wadden Sea which encompasses the countries' aspirations:

- A healthy environment which maintains the diversity of habitats and species, its ecological integrity and resilience as a global responsibility.

- Sustainable use.
- Maintenance and enhancement of values of ecological, economic, historic-cultural, social and coastal protection character, providing aspirations and enjoyment for the inhabitants and users.
- Integrated management of human activities which takes into account the socio-economic and ecological relationship between the Wadden Sea Area and the adjacent areas.
- An informed, involved and committed community.

# I. Integrated Management of the Wadden Sea

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## The Wadden Sea Plan

1 At the 6th Trilateral Governmental Conference in Esbjerg in 1991, it was decided to elaborate a management plan covering the Wadden Sea from Den Helder to Esbjerg in order to further substantiate the joint coherent protection. At the Esbjerg Conference, and the subsequent conference in 1994, the Leeuwarden Conference, 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.

2 A precondition is, that all measures, activities and policies mentioned in this plan, are to be realized in a sustainable way, as defined in the Convention on Biological Diversity. The three parties stress that this definition implies that the use of components of biological diversity may not lead to the long-term decline of biological and ecological diversity and that nature protection may not lead to the long-term decline in socio-economic conditions for the inhabitants of the Wadden Sea Area. The interests of all user groups within the Wadden Sea Area must be weighed against general and specific protection aims in a proper way. The impairment of traditional interests of the local population, which are not contrary to the protection aims, should be avoided.

3 The implementation of the Plan will not affect the protection of the local inhabitants against the sea.

## Status

4 The Wadden Sea Plan entails policies, measures, projects and actions which have been agreed upon by the three countries. The Plan is a framework for the overall Wadden Sea management and will be revised at regular intervals. It is a statement on how the three countries envisage the future coordinated and integrated management of the Wadden Sea Area and the projects and actions that must be carried out to achieve the Targets.

5 The Wadden Sea Plan was developed with the participation of authorities and interest groups. The Plan was prepared with financial support from the European Commission.

6 The Plan is a political agreement<sup>2</sup> 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. The implementation of the Plan shall not interfere with legislation regarding, in particular, marine navigation, management of marine navigation

<sup>2</sup> Meaning it is a legally non-binding document of common political interest.

routes, harbor management, disaster control, sea rescue services and other aspects of internal and external security.

## Delimitation

7 The geographical range of the Wadden Sea Plan is the Trilateral Wadden Sea Cooperation Area, in short, Wadden Sea Area, which is

- the area seaward of the main dike, or where the main dike is absent, the spring-high-tide-water line, and in the rivers, the brackish-water limit;
- an offshore zone 3 nautical miles from the baseline;
- the corresponding inland areas to the designated Ramsar and/or EC Bird Directive areas;
- the islands.

The trilateral conservation area, in short the Conservation Area, is situated within the Wadden Sea Area, and consists of:

- in The Netherlands, the areas under the Wadden Sea Memorandum including the Dollard;
- in Germany, the Wadden Sea national parks and protected areas under the existing Nature Conservation Act seaward of the main dike and the brackish water limit including the Dollard;
- in Denmark, the Wildlife and Nature Reserve Wadden Sea.

A map of the Wadden Sea Area and the Conservation Area is given in Appendix I.

It is recognized that within the Wadden Sea Area, there are areas in which human use has the priority.

## Shared Principles

8 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” (ED §1). The Principle is directed towards the protection of the tidal area, salt marshes, beaches and dunes (LD §8).

In addition, seven Management Principles have been adopted which are fundamental to decisions concerning the protection and management within the Wadden Sea Area (Esbjerg Declaration §3):

- 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.

Unreasonable impairments of the interests of the local population and its traditional uses in the Wadden Sea Area have 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 .

## Targets

9 The trilateral conservation policy and management is directed towards achieving the full scale of habitat types which belong to a natural and dynamic Wadden Sea. Each of these habitats needs a certain quality (natural dynamics, 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 six habitat types. Targets on the quality of water and sediment are valid for all habitats. Supplementary Targets on birds and marine mammals have been adopted, as well as, Targets on landscape and cultural aspects.

## Zoning

10 In a large complex ecosystem like the Wadden Sea, a differentiated management is necessary to balance the implementation of the Targets and sustainable human use.

At the Leeuwarden Conference, it was agreed 'to acknowledge zoning as a valuable management instrument and consider the need for harmonization of this and other management instruments' (LD §18.5).

11 The three Wadden Sea countries use different approaches to zoning. In order to be able to compare the implementation of the Targets in the different parts of the Wadden Sea Area, a common understanding of the various protection regimes and the way they are applied in the three countries is necessary. To this end, the different national protection regimes will be compared and assessed on the basis of a common classification tool. On the basis of this assessment, the need for harmonization of zoning, in relation to other instruments, will be investigated.

## Economic development and potentials

12 Within the constraints of a suitable protection and a natural development of the Wadden Sea, economic activities remain possible. Agriculture, industry, shipping, fisheries, tourism and recreation have considerable economic significance for the Wadden Sea region and must be balanced in a harmonious relationship between the needs of society and ecological integrity. This will be done in cooperation with the stakeholders. Regarding sustainable tourism development and recreational use in the Wadden Sea region, a joint proposal will be elaborated, together with the Interregional Wadden Sea Cooperation, for a policy emphasizing the development of communication and the involvement of the stakeholders. The policy should aim at contributing to maintain the social structures and cultural identity of the region.

## Communication and information

13 The Targets are the focal point of this plan. In order to achieve the goal to protect the full scale of habitat types in the Wadden Sea Area and a successful implementation of the Wadden Sea Plan, the active support of relevant authorities, interests groups and local citizens is important.

14 Effective communication on this plan and Targets are essential and possibilities to enhance this and improve public participation will be explored. Notwithstanding the responsibility of competent authorities for the conservation and protection of the Wadden Sea Area, different types of active involvement of stakeholders (co-management) can contribute to many aspects of the implementation of the Wadden Sea plan.

15 The following trilateral projects and actions will be undertaken:

- The possibilities for enhancing the quality of public participation, amongst others, by different types of active involvement of stakeholders (co-management) will be explored on a national basis.
- The results of the Trilateral Monitoring and Assessment Program (TMAP) will be made available for relevant authorities, interest groups and local citizens.
- The possibilities for a trilateral information and communication site on the Internet will be explored.

16 The competent authorities are invited to submit information on Environmental Impact Assessments in the Wadden Sea region to the Common Wadden Sea Secretariat.

## Evaluation and review

17 The progress of the implementation of the trilateral policies and management, projects and actions entailed in the Wadden Sea Plan will be evaluated in preparation of each Trilateral Wadden Sea Conference on the basis of, inter alia, the Quality Status Reports on the Wadden Sea (QSRs) emerging from trilateral monitoring and assessment activities, relevant reports and developments on the national and international level. As appropriate, the Wadden Sea Plan will be amended on the basis of the conclusions and recommendations of the review process.

## Structure of the Plan

18 This document is structured according to the Target categories as adopted at the Leeuwarden Conference:

- Landscape and Culture
- Water and Sediment
- Salt Marshes
- Tidal Area
- Beaches and Dunes
- Estuaries
- Offshore Area
- Rural Area
- Birds
- Marine Mammals

For each Target category, a brief description is given followed by its current status, the precise wording of the relevant Target(s), an assessment of the situation and how to proceed. On the basis hereof, trilateral policy and management and proposals for trilateral projects and actions necessary for the implementation of the Targets have been developed, taking into account the Esbjerg and Leeuwarden Declarations.

The measures, projects and actions generally apply only to the habitat under consideration. The chapters 'Landscape and Culture', 'Water and Sediment', 'Birds' and 'Marine Mammals' have a habitat crossing character. Measures, projects and actions contained in these chapters also apply to one or more of the other habitats.

Three Appendices are attached to the Plan. In Appendix I, thematic maps of the Wadden Sea Area are given. Appendix II contains an index of entries of activities, Appendix III a glossary.



## II. The Targets

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- 1 Landscape and Culture
- 2 Water and Sediment
- 3 Salt Marshes
- 4 Tidal Area
- 5 Beaches and Dunes
- 6 Estuaries
- 7 Offshore Area
- 8 Rural Area
- 9 Birds
- 10 Marine Mammals



# 1 Landscape and Culture

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About 2,600 years ago, salt marshes started to develop behind the Wadden Sea islands. The green, fertile grounds, which are, nowadays, the embanked polders and marsh areas of the northern Netherlands, northern Germany and the most southern part of Denmark, were soon to be inhabited and cultivated.

The contemporary towns and villages are in many cases located at the authentic settlements on the small artificial mounds which were erected by the earliest settlers from the 7th century B.C. onwards. Nowadays, they belong to the most characteristic elements of the Wadden Sea marsh landscape. The earliest inhabitants lived in an area of tidal flats, moors and swamps. The mounds constituted the only active interference in the area.

About 1,000 A.D., the building of a comprehensive system of seawalls and sluices commenced, in order to enable further grazing and agricultural use. It allowed for settling in the marshes without the use of artificial mounds. Through the subsequent centuries, a unique and wide-open landscape developed with extensive agricultural activities with, a.o., cattle breeding and an industrious commerce with a large part of Europe.

In conjunction with agriculture, North Sea fishery, trade and whaling, a flourishing economy developed in extensive periods throughout the centuries on the islands and the polder and marsh areas which laid the foundation for the development of urban centers and villages and which, in terms of buildings and houses, are quite characteristic, well conserved and unique.

Of international interest is, also, the role the Wadden Sea played in international shipping. Through the ages, important routes went through the Wadden Sea. A prominent record of this history are the numerous ship wrecks in the Wadden Sea.

## Status

The topography of the contemporary landscape is, to a large degree, determined by the way it was shaped by Man. The ditches and the cultivated landscape still follow the natural creek and lagoon system of the salt marshes. The roads are situated along the shores and the higher parts of the marshes and polders and the contour of the seawall determines the horizon. The Wadden Sea landscape is characterized as wide open, with the seawall as the delimitation between the dynamic processes of the tidal flats and salt marshes and the cultural landscape of the marshes and polders.

The cultural-historic and landscape values of the area are intimately related to the economic and social development of the coastal area and, by international standard, unique and unrivalled. The cultural historic and landscape values are equivalent to the area's natural values and are an important basis for the development of tourism.

The cultural-historic and landscape heritage and the diversity between the regions are essential for the comprehension of the area's development and identity and the inhabitants' identification with the landscape. It entails a distinctive international dimension comparable to its natural values. Therefore, it was agreed at the Leeuwarden Conference in 1994 to pay attention to this aspect as the third dimension in the trilateral Wadden Sea cooperation, in addition to the natural and environmental dimensions. The integration of all three dimensions into a coherent policy and management is essential to ensure a sustainable development.

## Targets

**Identity** - to preserve, restore and develop the elements that contribute to the character, or identity, of the landscape.

**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.

## Assessment

The landscape and cultural-historic heritage of the Wadden Sea Area is under rapid transformation because of changes in agricultural practices, amongst others, changes in crops, enlargement of land parcels, urbanization and industrialization, and the associated construction of infra-structural installations. This development interferes with characteristic elements such as the openness, serenity and identity of the landscape, the topography of the landscape 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 interfere with the landscape values.

The historic elements of the area are, to a lesser degree, under transformation, although, at the end of the last century and the start of this century, some of the historic elements of the area partly disappeared, e.g. the old dikes and mounds which were partly excavated for fertilizer.

## How to proceed

Because historic elements of the landscape and buildings are, to a considerable extent, protected by national legislation, the existing legal, administrative and planning instruments in the three countries should enable an integrated maintenance and development of the landscape, including proper planning of wind turbines. At the same time, the awareness of the unique cultural-historic and landscape values must be enhanced because it is important for the comprehension of, and the identity with, the landscape and cultural-historic values. The promotion of sustainable

cultural tourism may contribute to both enhancing the awareness of the said values and provide opportunities.

## 1.1 Trilateral policy and management

1.1.1 The nomination of the Wadden Sea Area, or parts thereof, as a World Heritage Site will be strived for, taking into account the natural and cultural-historic values of the area.

1.1.2 The cultural-historic and landscape elements of the Wadden Sea Area will be protected and conserved through appropriate planning and management.

1.1.3 The awareness of the area's cultural-historic and landscape values will be enhanced, where possible and appropriate, on a joint basis.

1.1.4 The construction of wind turbines in the Conservation Area is prohibited. (Identical with 9.1.9).

1.1.5 The construction of wind turbines, in the Wadden Sea Area outside the Conservation Area, is only allowed if important ecological and landscape values are not negatively affected. (Identical with 9.1.10).

## 1.2 Trilateral projects and actions

1.2.1 The preparation of a nomination of the Wadden Sea Area, or parts thereof, as a World Heritage Site (WHS) in close cooperation with the local and regional authorities, as well as, local interest groups and local citizens, taking into account i.a. the recommendations of the 1997 workshop on cultural-historical and landscape values.

1.2.2 An inventory and a map of the most important cultural-historical and landscape elements of the Wadden Sea area including

- an assessment of which elements should be maintained and developed and
- recommendations for the protection, taking into account the recommendations of the 1997 workshop on cultural-historical and landscape values.

The result of the investigation will be published in a report in each of the three languages to ensure that the information is easily accessible and will be widely dispersed.

1.2.3 An investigation on how the cultural and landscape features can be taken into account in Environmental Impact Assessments and an exchange of information on this.

1.2.4 An investigation of the possibilities of an initiative in the field of cultural tourism, in close cooperation with local authorities and relevant organizations.



# 2 Water and Sediment

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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 these 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 Man, but which also occur naturally in the environment, be it in low concentrations.

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

Macro-pollutants are 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.

Micro-pollutants 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 and remobilization of micro-pollutants.

## Status

The relatively high level of pollution of the Wadden Sea is caused by three main factors:

- A number of rivers, of which the catchment areas are highly industrialized and agronomized, flow into the Wadden Sea. The catchment areas add up to some 231,000 km<sup>2</sup> which is about 17 times the Wadden Sea Area. It extends to the southeast as far as the Chechian-Austrian border. Among the rivers are the 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 German rivers Elbe, Weser and Ems, together with the Dutch IJsselmeer, each year discharge, on average, 60 km<sup>3</sup> of polluted water into the Wadden Sea. The rivers transport heavy metals, PCBs and pesticides like lindane and large amounts of nutrients.
- 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 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.

## Targets

Background concentrations of natural micropollutants.

Concentrations of man-made substances as resulting from zero discharges.

A Wadden Sea which can be regarded as a eutrophication non-problem area.

## Assessment

Over the last two decades, the loads of toxic compounds discharged by rivers have decreased substantially. In the Wadden Sea itself, a general reduction in the concentration of regularly monitored pollutants, such as heavy metals and PCBs, can be observed.

The two most important nutrients are nitrogen compounds and phosphate. Of these, the concentrations of phosphate and, to a lesser extent, nitrogen compounds in the water of the Wadden Sea have started to decrease in the second half of the 1980s, mainly as a result of the use of phosphate free detergent and water purification.

The fact that nitrogen inputs have not been reduced as much as phosphorus, has caused a shift in the relative concentrations of these nutrients. This may cause an increase in occurrence of toxic algae. It is not clear whether there are other biological consequences.

Many toxic compounds, such as heavy metals and PCBs, entering the Wadden Sea finally end up in the sediment, especially in fine-grained sediments. During dredging, special attention has to be paid to the pollution level of the dredged spoil. Moreover, dredging and dumping of dredged material may affect the visibility of the water column.

Shipping activities are a potential source of contamination with oil, garbage and hazardous substances. In the past years, several incidents have occurred of washed ashore chemicals and oil which originated from ships. The number of oiled birds washed ashore along the Wadden Sea coast remains high. In most cases, the oil originates from shipping.

Atmospheric deposition is another major source of pollutant inputs of certain substances.

Recently, it was decided, within the IMO, that certain classes of ships carrying dangerous cargos should follow the mandatory route off the Wadden Sea coast of The Netherlands and Germany. It is the route from North Hinder to the German Bight and vice versa (Deepwater route) and it is mandatory for oil tankers larger than 10,000 gross tons (GT) and ships carrying noxious liquid substances or gases in bulk ( $\geq 5,000$  or  $\geq 10,000$  tons GT).

According to an EC Directive, vessels carrying hazardous goods entering European harbors are obligated to report to the competent authorities.

## How to proceed

The trilateral policy and management, regarding pollution issues, is closely related to developments within the framework of the North Sea Conferences, the Oslo and Paris Conventions, the International Maritime Organization (IMO) and the European Union. It is within these frameworks that international agreements on pollution issues, relevant for the whole catchment area of the Wadden Sea Area, are made. The most relevant agreements are those of the North Sea Conferences and of the Paris Commission regarding a 50% reduction of nutrient inputs and a 50 to 70% reduction of inputs of hazardous substances between 1985 - 1995. In 1992, the Paris Commission decided to reduce, by the year 2000, pollution from discharges of compounds which are toxic, persistent and liable to bioaccumulate, to levels that are not harmful to man or nature, with the aim of their elimination. In 1995, the North Sea states agreed to prevent pollution by continuously reducing discharges, emissions and losses of hazardous substances, thereby, moving towards the target of their cessation within one generation (25 years); with the ultimate aim of concentrations in the environment near background values for naturally occurring substances, and close to zero for man-made synthetic substances (NSC Esbjerg, §17). Also, the MARPOL Convention is very important for the Wadden Sea because it regulates operational discharges of oil, garbage and hazardous substances from ships. In the IMO framework, furthermore, extensive regulations for the enhancement of safe ship traffic have been developed.

At the 7th Trilateral Wadden Sea Conference, it was agreed that regarding the Targets on the quality of water and sediment, it is the trilateral policy to strengthen the cooperation in relevant international frameworks to realize the Targets to reduce environmental pollution (LD §6.3). Where appropriate, such cooperation will be strengthened with the aim of further reducing, in particular, inputs of organic micro-pollutants and nitrogen.

Common Trilateral Statements were submitted to the North Sea Conferences in which the special interests and problems of the Wadden Sea have been elaborated in relation to the issues dealt with at the subsequent conferences. The coordination with the ongoing preparation of the North Sea Conferences and, regarding monitoring and assessment in OSPAR, is achieved by means of a permanent observership in the relevant working groups.

It is unclear to what extent the handling of dredging and the dumping of dredged material is comparable in the three Wadden Sea countries. In 1993, Guidelines on dredged material were published by the Oslo Commission. At the Esbjerg Wadden Sea Conference, it was agreed to cooperate in developing national criteria for dredging and disposal of dredged material in accordance with the Oslo Guidelines and to consider the need for harmonization (ED §9).

In light of the importance of dredging and dumping activities for the Wadden Sea ecosystem, it seems appropriate to evaluate this decision with the aim of continuing the process of trilateral harmonization.

With regard to illegal discharges from ships, relevant developments in the North Sea Conference and IMO frameworks must be supported. At the Leeuwarden Conference, it was decided to invite competent authorities to take appropriate steps to minimize discharges into the sea, especially from recreational shipping, including systems for the operations of shore reception facilities as soon as possible, at the latest by 1996 (LD §64.4). In order to be able to evaluate this decision, it is necessary to have an overview of the availability and accessibility of shore reception facilities in Wadden Sea ports.

## 2.1 Trilateral policy and management

2.1.1 Trilateral policies for the reduction of inputs of nutrients and hazardous substances from all sources are congruent with those within the OSPAR and North Sea Conference frameworks.

2.1.2 In order to reduce nutrient inputs to the Wadden Sea, the measures for sensitive areas under the Urban Waste Water Directive and the measures for vulnerable zones under the conditions of the Nitrate Directive will be applied to the catchment area of the Wadden Sea in line with the Esbjerg North Sea Conference decision.

### Pollution from ships

2.1.3 With the aim of eliminating operational pollution and minimizing accidental pollution, an information and guiding system for ships carrying hazardous substances will be established.

2.1.4 Harbors bordering the Wadden Sea will have adequate facilities to handle all types of residues and wastes generated by ships to meet the requirements of the MARPOL Convention.

2.1.5 To prevent spills of oil and hazardous substances 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.

### Dredging and dumping of dredged material

2.1.6 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 the main experiences with the implementation of these criteria.

2.1.7 Dredged material from the Wadden Sea Area and Wadden Sea harbors will, in principle, be dumped back into the system unless the contamination exceeds national criteria levels.

### Discharges from oil and gas exploration and exploitation activities

2.1.8 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 i.a. in a prohibition to discharge oil-based muds and cuttings. Dumping or discharge of water based muds and/or cuttings is only allowed in line with relevant PARCOM agreements.

2.1.9 The leaching of toxic substances from protective coatings of pipelines and other installations will be avoided by the use of appropriate materials.

2.1.10 In the 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 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.

## 2.2 Trilateral policy and management

2.2.1 The development of common Wadden Sea specific criteria for the differentiation between eutrophication problem- and non-problem areas necessary for assessing progress in the implementation of the Targets for the reduction of nutrients and, consequently, the reduction of eutrophication. The project will be carried out in close cooperation with the work going on in OSPAR regarding the development of a strategy to combat eutrophication.

2.2.2 An inventory and evaluation on information and guiding systems for ships carrying hazardous substances.

2.2.3 An inventory and evaluation of national practices regarding dredging and the dumping of dredge spoils with the aim of investigating whether harmonization is necessary and feasible.

2.2.4 An inventory and assessment of the availability and accessibility of shore reception facilities.



# 3 Salt Marshes

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The habitat type salt marsh includes all mainland and island salt marshes, including the pioneer zone. The brackish marshes in the estuaries are also considered part of this habitat type (Leeuwarden Declaration Annex I).

Salt marshes are typical Wadden Sea habitats of great beauty, diversity and attractiveness for visitors to the Wadden Sea area and they are important and unique habitats.

NATURALLY DEVELOPED SALT MARSHES have a drainage system of irregular, winding gullies, sometimes a pioneer zone, 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. The remains of the natural salt marshes can be found on the landside of dune areas, and in some places, along the mainland coast.

ARTIFICIAL SALT MARSHES are salt marshes which have developed through active human interference, like shelter, by means of brush wood groynes. 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. Remains of natural gullies and salt marsh cliffs can sometimes be found. When inundation takes place during winter, the influence of the sea water on the vegetation is often negligible. The soil is saturated with fresh water and the sea water is drained off very rapidly within a few days after flooding.

## Status

The present salt marsh area is, mainly as a result of embankments, much smaller than it used to be. Moreover, many of the remaining salt marshes are heavily influenced by human use. With the exception of some locations in Denmark and Lower Saxony, almost all natural mainland salt marshes have been embanked in the past, some only as a summer polder, but most of them as polders on the land side of a sea dike. Salt marshes and summer dikes are important elements of the coastal protection strategy.

Most of the artificial salt marshes on the Wadden Sea islands have an almost natural geomorphology, whereas most mainland artificial salt marshes have a geomorphology that is dominated by human structures: brushwood groynes, ditches and ground dams.

The artificial salt marshes are considered an additional advantage resulting from embankments, although created at the expense of natural tidal areas.

## Targets

An increased area of natural salt marshes.

An increased natural morphology and dynamics, including natural drainage patterns of artificial salt marshes, under the condition that the present surface area is not reduced.

an improved natural vegetation structure, including the pioneer zone, of artificial salt marshes.

Favorable conditions for migrating and breeding birds.

## Assessment

Large areas of natural and artificial 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 basin considerably. These losses have been compensated for, at least partly, on the islands where new 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, whereas the mainland salt marshes must be regarded as largely artificial.

The main interference with the natural development of salt marshes and summer polders is caused by coastal protection and land reclamation activities. The intensive drainage of the 'normal' management practice of the land reclamation areas is, at least partly, beneficial for agriculture.

Agricultural activities, mainly grazing and drainage, but also the application of fertilizer and pesticides, affect the natural vegetation structure and, consequently, the faunal composition.

The effects of a reduction of the volume of the tidal basin, in the light of sea level rise and bottom subsidence, are not quite well understood. There is, however, the danger that these combined processes will cause a reduction of the area of tidal flats. There are indications that this might result in some areas in the reduction of the area of the salt marshes.

## How to proceed

The possibilities for the development of new natural salt marshes are restricted. The best way to increase the area of natural salt marshes is through improving natural conditions in existing salt marshes. The natural morphology and dynamics of the salt marshes must be enhanced through reduction of interference with natural processes. For example, artificial drainage systems should be modified in such a way that they become self sustaining. In order to improve the natural vegetation structure and the conditions for birds, the grazing pressure must, where necessary, be reduced.

Disturbance of birds through hunting and recreational activities should be reduced as much as possible.

Outbankment of summer polders, excluding the summer dikes of the Halligen, because these protect the inhabitants, is a very good instrument to enlarge the salt marsh region, provided

socio-economic and coastal protection aspects are considered as well. It can yield salt marsh areas without interference with natural geomorphological processes. Ecologically valuable habitats can be restored, in case of summer polders, on relatively old and high salt marshes. Such salt marshes are rare and their restoration is of utmost importance for the restoration of the total richness of the mainland salt marsh habitats.

## 3.1 Trilateral policy and management

3.1.1 The general trilateral policy regarding salt marshes aims at adequately protecting salt marshes in order to allow natural processes to take place within this habitat, with special emphasis on flora and fauna. To this end, all salt marshes shall be brought under legal protection, insofar this has not yet been done, and Best Environmental Practice will be applied in salt marsh protection and development, taking account of experiences with local concepts and measures.

### Salt Marsh Area

3.1.2 The trilateral policy takes as starting point that the present area of salt marshes will not be reduced and that, where possible, the area of natural salt marshes will be extended.

3.1.3 The long-term goal is to limit human interference with the salt marshes, except for the edges of the marshes which may need protection against erosion. In working towards this long-term goal, the interest of cultural history, coastal protection and private rights should be taken into account.

3.1.4 The present artificial salt marsh area can be protected against erosion because the size of the land reclamation salt marshes along the mainland is, generally, still far below the total size of the mainland salt marshes in a more natural situation without sea walls.

3.1.5 An increase of the salt marsh area will be aimed for through the restoration of salt marshes by opening summer dikes, provided that it is in line with the Targets for the region, socio-economic conditions and coastal protection requirements. The Halligen are protected by summer dikes for the security of the inhabitants. There is no intention to open these dikes.

### Coastal Protection

3.1.6 The interests of nature protection and sea defence measures will be further harmonized, taking into account that the safety of the inhabitants is essential.

3.1.7 As a principle, it is prohibited to embank salt marshes and loss of biotopes through sea defence measures will be minimized. Reinforcement of existing dikes will be carried out on the location of existing dikes and, preferably, on the land side. (Reference to 4.1.2).

3.1.8 The application of Best Environmental Practices for coastal protection will be enhanced.

3.1.9 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.

### Natural Dynamics

3.1.10 The natural drainage of salt marshes will be increased by reducing drainage works where possible and practicable and by introducing more environmentally friendly digging methods.

3.1.11 It is the aim to reduce and/or diversify grazing in order to increase the diversity of vegetation and associated animal species in salt marshes, with the exception of those areas where grazing is necessary for coastal protection measures.

3.1.12 It is the aim to reduce disturbance caused by recreation and tourism by introducing and applying information systems and/or temporal and spatial zoning. (Identical with 5.1.8).

3.1.13 The application of natural and artificial fertilizers and pesticides and other toxic substances on the salt marshes will be stopped.

### Infrastructural works

3.1.14 New infrastructural works which have a permanent or long-lasting impact should not be established in salt marshes.

3.1.15 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 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 4.1.14).

3.1.16 New licenses for the construction of pipelines in the salt marshes for the transport of gas and oil shall not be issued unless such measures are necessary for imperative reasons of overriding public interest. In that case, the method of construction and the planning of the location line 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. (Reference to 4.1.13).

## 3.2 Trilateral projects and actions

3.2.1 A study into the possible effects of enhanced sea level rise by a Trilateral Expert Group to be established under the coordination responsibility of the competent authorities and, on the basis of these studies, the development of proposals for future integrated coastal defence and nature protection policies. (Identical with 4.2.1, 5.2.2, 7.2.1).

3.2.2 The investigation of existing salt marsh maintenance works and methods and possibilities for enhancing more natural drainage patterns.

3.2.3 The investigation of existing agricultural use of the salt marshes and methods for improving the quality of the salt marshes.

# 4 Tidal Area

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The tidal area covers all tidal flats and subtidal areas. The border of the North Sea side is determined by an artificial 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 (Leeuwarden Declaration Annex I).

The tidal area is the most characteristic habitat of the Wadden Sea. It is characterized by an ever changing pattern of plates and gullies. 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 in the world.

## ■ Status

As a result of the daily tides and the open connection with the North Sea, the tidal area is a very dynamic area.

Characteristic biological features of the tidal area are, amongst others, mussel beds, *Sabellaria* reefs and *Zostera* fields. The tidal area is subject to natural impacts like ice winters, strong gales, changes in average temperature, visibility and parasites. Additionally, there is the influence of Man through, amongst others, fisheries, dredging, offshore activities and coastal protection measures.

At low tide, the tidal flats are important feeding, roosting and/or moulting areas for birds and seals. The high biological productivity of the tidal area is, also, in part, the basis for shellfish fisheries and mussel cultures.

Next to fisheries, recreation is an important activity in the tidal area; the main recreational activities are mudflat walking and boating.

Parts of the tidal areas constitute the seaward access to harbors. Management of these marine navigation routes is in the interest of the public and is regulated nationally.

## Targets

A natural dynamic situation in the tidal area.

An increased area of geomorphologically and biologically undisturbed tidal flats and subtidal areas.

An increased area and a more natural distribution and development of natural mussel beds, *Sabellaria* reefs and *Zostera* fields.

Viable stocks and a natural reproduction capacity, including juvenile survival, of the Common Seal and the Grey Seal.

Favorable conditions for migrating and breeding birds.

## Assessment

The natural dynamics of the tidal area have been considerably influenced by land reclamation and the construction of dikes and other coastal defence works. These have caused a substantial reduction of the volume of the tidal basin. Also, the dredging of shipping lanes, sand extraction and natural gas extraction influence the natural dynamics in the tidal area.

The tidal area is a sediment importing system and has, therefore, been able to compensate for the subsidence of the sea bottom. The sea level rise caused by the greenhouse effect will most probably increase the sediment importing demands. The exploitation of natural gas in and around the Wadden Sea area, causes an additional subsidence of the sea floor and aggravates the effects of sea level rise. The extraction of sand from the Wadden Sea for commercial purposes also has a negative effect on the sand balance. There is an important link with the offshore zone because sand is imported from this area. This will affect the sandy coast of the islands which will become steeper.

Also important for the sand balance in the Wadden Sea, is the water circulation pattern which, in turn, has been, and still is, influenced by land reclamation and coastal defence activities.

There are indications that embankments and the shortening of the coastline have decreased the amount of available fine sediments and the possibilities for the sedimentation of fine sediments.

Several human activities, especially cockle and mussel fisheries, dredging and sand and shell extraction, disturb the sediment. This may cause temporal or structural changes in the sediment morphology and biology, a reduction of sediment stability, and an increased turbidity of the water column. Mussel culture can have large effects on the habitat structure of subtidal and intertidal areas.

Disturbance may interfere with the normal behavior of animals. The actual impact depends on the level and duration of the disturbance and the period in which it occurs. Human uses which cause disturbance, and for which trilateral political agreements have been adopted, are fisheries, hunting, recreation, shipping, civil air traffic, military activities, mineral extraction and the generation of energy.

A characteristic feature of the Wadden Sea tidal area is its high biological productivity which is

the main reason for the fact 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. Shellfish fisheries may interfere with the normal food availability of certain bird species. This interference may have consequences for the food availability in years with low shellfish stocks.

In the last decade, a serious decrease in the numbers and size of mature mussel beds has occurred, mainly in the Dutch and Lower Saxony part of the Wadden Sea. Fishing for seed mussels is an important factor in this decline, but also, ice winters and storms play a role. It is unclear what the main causes for the decline in *Sabellaria* reefs and seegrass meadows have been.

## 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 light of the expected sea level rise resulting from the greenhouse effect, additional or amended policies are desirable for the management of the tidal basin. 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 wild mussel beds, *Zostera* fields and *Sabellaria* reefs is necessary for a proper implementation of the relevant Targets.

The management of seals in the tidal area is covered by the Seal Management Plan. This plan will be amended and updated at regular intervals.

## 4.1 Trilateral policy and management

### Natural dynamics and coastal protection

4.1.1 Because the natural dynamics in the tidal area are directly related to coastal defence activities on the mainland coast, the islands and the offshore zone, future coastal protection policies will, as a principle, be based on these interrelationships.

4.1.2 Embankments of tidal areas will, as a principle, be prohibited and the loss of biotopes through sea defence measures minimized. Reinforcement of existing dikes will be carried out on the location of existing dikes and, preferably, on the land side. (Reference to 3.1.7).

4.1.3 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.

4.1.4 Permission for new permanent structures, which may influence the natural dynamics in the tidal area of the 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 Conservation Area, will only be granted after having been made subject to an assessment in accordance with the EC Directive on Environmental Impact Assessment.

All 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.

### Shipping, harbors and industrial facilities

4.1.5 The extension, or major modification, of existing harbor 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. In the Conservation Area, new not yet approved plans for new construction, as well as for the extension or major modification of existing harbor and industrial facilities, are not allowed unless such is necessary for imperative reasons of overriding public interest and if no alternative can be found. (Identical with 6.1.1).

4.1.6 Shipping routes and harbors are to be managed for their intended purposes; 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.

4.1.7 New shipping routes to the harbors and the Wadden Sea islands will, in principle, not be dredged unless the present routes threaten to disappear.

4.1.8 Shipping links across the water shed<sup>3</sup> and other routes exist by virtue of natural dynamics. For such routes, in principle, no dredging operations will be carried out.

4.1.9 Speed limits within the tidal area have been, or will be, imposed where such is deemed necessary.

### Mineral extraction and infrastructure

4.1.10 In the Conservation Area, new exploitation installations for oil and gas will not be permitted. Exploration activities are permitted within the Conservation Area if it is reasonably plausible that deposits can be exploited from outside the 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.

4.1.11 The extraction of sand in the 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 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.

4.1.12 Permits for small scale extractions of sand will remain in force. Small scale extractions of mud and sea water for medical purposes will remain permitted.

<sup>3</sup> Watershed is translated in Danish into "vandskel", in German into "Watrücken" and in Dutch into "wantij"

4.1.13 The construction and planning 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 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 such measures are necessary for imperative reasons of overriding public interest and if no alternative can be found. (Reference to 3.1.16).

4.1.14 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 3.1.15).

### Dredged material

4.1.15 The impact of dumping dredged materials will be minimized. Criteria are, amongst others, appropriate dumping sites and/or dumping periods. (Identical with 6.1.3).

### Mussel and cockle fishery

4.1.16 The negative effects of cockle fishery are being limited by:

- Cockle fishery is not allowed in the German part of the Conservation Area;
- Cockle fishery is not allowed in the Danish part of the Wadden Sea Area, with the exception of some small areas along the Esbjerg shipping lane and in the Ho Bay;
- Cockle fishery is allowed in the Dutch part of the Wadden Sea Area, but has been limited by the permanent closure of considerable areas; there are possibilities for additional restrictions to safeguard food for birds. A co-management scheme with the fishing industry is in operation, in which the protection and enhancement of the growth of wild mussel beds and *Zostera* fields are central elements. (Identical with 9.1.3).

4.1.17 The negative effects of mussel fishery are limited by the permanent closure of considerable areas. In addition, the management of fishery on mussels aims at, inter alia, protecting and enhancing the growth of wild mussel beds and *Zostera* fields. (Identical with 9.1.4).

4.1.18 Mussel fishery will, in principle, be limited to the subtidal area. Based on national management plans, which are documented in the Progress Report, fishery on the tidal flats may be granted. The fishery sector is called upon to exchange information on the existing practices and to investigate possibilities for minimizing impacts of mussel fishery, in general and seed mussel fishery, in particular. (Identical with 9.1.5).

4.1.19 The current area of mussel culture lots will not be enlarged.

4.1.20 The existing permit for oyster culture will remain in force for traditional reasons. According to this permit, the imported oysters originate from hatcheries and are under veterinary control. New permits will not be granted.

### Tourism and recreation

4.1.21 The recreational values of the Wadden Sea will be maintained and to this end,

- 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;
- within the Conservation Area, new marinas will be avoided and the extension of the existing marina capacity will only be allowed within the approved levels;
- wind surfing has been, or will be, limited.

4.1.22 Speed limits for ships have been, or will be, imposed, if this is deemed necessary, taking into account safety, environmental and recreational factors.

4.1.23 The negative effects of hovercraft and hydrofoil craft and other high-speed craft are minimized by the following strategies:

- In The Netherlands and Germany, hovercraft and hydrofoil craft are forbidden in the tidal area of the Conservation Area; new, other high speed craft are forbidden outside the designated shipping routes in the area;
- 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.

4.1.24 It is the aim to reduce disturbance caused by recreation and tourism by introducing and applying information systems and/or temporal and spatial zoning.

## 4.2 Trilateral projects and actions

4.2.1 A study into the possible effects of enhanced sea level rise by a Trilateral Expert Group to be established under the coordination responsibility of the competent authorities and, on the basis of these studies, the development of proposals for future integrated coastal defence and nature protection policies. (Identical with 3.2.1, 5.2.2 and 7.2.1).

4.2.2 The development of strategies for the protection and enhancement of *Zostera* and *Sabellaria* on the basis of existing and new knowledge, in view of the not yet completely understood decline of these species.

4.2.3 The investigation of possibilities and conditions for enhancing the growth of natural mussel and cockle beds, *Sabellaria* reefs and *Zostera* fields.

4.2.4 The investigation of the impact of shrimp fisheries on the bottom fauna.

4.2.5 A study into the shell production in the total system, up to three nautical miles seaward of the islands, to obtain information on natural recruitment of shells, on the basis of which new quota for sustainable shell extraction will be fixed.

4.2.6 An invitation to the Permanent Dutch-German Transboundary Waters Commission to make progress, within their mandate, in elaborating a specific action plan for the Ems Dollard estuary.

4.2.7 An inventory and evaluation of national practices regarding the dredging of shipping routes.

# 5 Beaches and Dunes

Beaches and dunes include beaches, primary dunes, beach plains, primary dune valleys, secondary dunes and heathland behind the dunes (Leeuwarden Declaration Annex I). 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 the Husumer Bucht.

## Status

Dunes and beaches have an important coastal protection function. In most parts of the Wadden Sea Area dunes are protected. The dynamics of the coastal zone have been restricted, especially in the neighborhood of inhabited areas, buildings and other artificial structures. The desire for safer, arable and inhabitable land has also led to the construction of sand dikes between neighboring dune areas or the construction of long sand dikes on the east side of islands. The result has been a considerable loss of dynamic areas and the loss of relatively rare sub-habitats, like green beach plains and primary dune valleys.

Large parts of our stable dune regions must have been overgrazed in former times, resulting in a very dynamic, but not natural, situation. This situation has changed completely. Most of the older dunes are consolidated now, partly covered by pine wood plantations, and sand transport by wind is restricted by sea defence measures. Most old dunes are erosion-free now, just being, more or less, fossil bodies with aging vegetation, without the natural renewal of secondary dune formation.

Water extraction on many of the islands has caused a lowering of the ground water table and, consequently, the disappearance of wet dune valleys with their typical vegetation. The dune vegetation is negatively affected by the input of nutrients from the air. Dunes and beaches are attractive sites for tourists. Intensive use may cause damage to the vegetation and disturbance of animals.

## 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.

Favorable conditions for migrating and breeding birds.

## Assessment

Existing policies focus, mainly, on the protection and conservation of dunes and beaches and the harmonization of nature protection and sea defence policies. These policies have, generally, fixed the status quo. Recreational pressure, in some areas, still causes loss of natural dunes and beaches, disturbance of flora and fauna and a lowering of the ground water table through increased ground water extraction. The only two threatened breeding bird species in the Wadden Sea Area, the Kentish Plover and the Little Tern, breed on beaches.

## 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 protection techniques which allow for higher natural dynamics. In addition, active stimulation measures enhancing the dynamic situation on beaches and in dunes may be taken. Coastal management must be carefully tuned to natural values and natural processes.

Additional protection of beach breeding species may be achieved through relatively simple zoning measures limited in space and time. From these, also the Grey Seal, which whelps and nurses on sands, may profit.

Efforts should be made to extend the protection of dune areas in the Wadden Sea Area.

## 5.1 Trilateral policy and management

5.1.1 Dunes will be brought under protection, insofar as this has not yet been done and natural processes are allowed to take place within this habitat, with special emphasis on flora and fauna. To this end, Best Environmental Practice will be applied in dune protection and development.

5.1.2 The interests of nature protection and sea defence measures will be further harmonized, taking into account that the safety of the inhabitants is essential.

5.1.3 For beaches, the trilateral policy takes into account the demands of recreation and tourism, coastal protection and natural values, like high geomorphological dynamics and important breeding areas. Where possible, the natural situation should be increased by 'hands-off management'.

5.1.4 In order to prevent a further loss of dune areas, the existing infrastructure will, in principle, not be extended and new constructions will, in principle, not be allowed.

5.1.5 Coastal management should aim at a natural dynamic development taking into account the necessity to protect the security of the inhabitants on the islands and safeguarding the stability and the infrastructure of the islands.

5.1.6 The loss of biotopes by sea defence measures will be minimized.

5.1.7 In case coastal protection is carried out, Best Environmental Practice will be applied.

5.1.8 It is the aim to reduce disturbance caused by recreation and tourism by introducing and applying information systems and/or temporal and spatial zoning. (Identical with 3.1.12).

5.1.9 It is important to restore the natural dynamics. This could be done by e.g.

- allowing sand drift,
- restoring natural dune vegetation,

as far as coastal protection is not affected.

5.1.10 Ground water extraction will be managed in such a way that no negative effects on wet dune valleys occur.

## 5.2 Trilateral policy and management

5.2.1 The selection of potential areas where dynamic dune development is possible and the elaboration of plans for stimulating and improving a dynamic development on the basis of available information.

5.2.2 A study into the possible effects of enhanced sea level rise by a Trilateral Expert Group to be established under the coordination responsibility of the competent authorities and, on the basis of these studies, the development of proposals for future integrated coastal defence and nature protection policies. (Identical with 3.2.1, 4.2.1 and 7.2.1).

5.2.3 The encouragement of experiments with offshore sand suppletion.

5.2.4 An inventory and assessment of existing Best Environmental Practices for coastal protection.



# 6 Estuaries

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The estuaries in the trilateral cooperation are delimited on the landward side by the mean brackish water limit, and on the seaward side by the average 10‰ isohaline at high water in the winter situation. In terms of the Wadden Sea Area, the estuarine areas are thus the areas between the 10‰ isohaline as defined at the sea side up to the mean brackish water limit of the rivers, and at 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.

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 four such estuaries in the Wadden Sea Area with 'open access' to the Wadden Sea, namely the Varde Å in the Danish Wadden Sea Area and the Elbe, the Weser and the Ems in the German Wadden Sea Area, whereas no estuaries have been preserved in the Dutch part.

## ■ Status

The estuaries serve as a migration route for migrating fish like Houting, Salmon, Trout and Sturgeon. They are bordered by salt marshes in which Reed and Sea Club-rush can dominate large areas, instead of Sea-purslane and other salt marsh species. The flocculation of clay minerals stands for a muddy soil, with a benthic fauna that suits the needs of birds like Avocet, Redshank and Spotted Redshank. The brackish salt marsh vegetation produces more biomass than any other salt marsh, attracting large numbers of ducks and geese that feed on the vegetation and the seeds that are released during the autumn.

Brackish areas are also important inundation areas. Many of these brackish salt marshes have been reclaimed and several river outflows (especially the smaller ones) have sluices that prevent natural mixing of fresh and salt water and the establishment of transition zones. In The Netherlands, initiatives have been taken to modify sluicing regimes aiming at achieving more natural transitions between fresh and salt water.

The estuaries of the rivers Elbe, Weser and Ems constitute the seaward access routes to the major German sea ports. Management of these marine navigation routes is a matter of public interest and regulated by law. The Elbe and the Weser estuaries are among the most industrialized regions of the Wadden Sea Area.

The Varde Å estuary has morphologically remained in its natural state, but is subject to a very intensive agricultural exploitation.

## Targets

Protection of valuable parts of the estuaries.

Maintaining and, as far as possible, restoring the river banks in their natural state.

## Assessment

The ecological importance of the river Ems is, in comparison with the other estuaries, to be valued as high, with a good water and sediment quality. The situation has been aggravated over the last ten years i. a. with the deepening of the river and the associated ecological impacts. In spite of increasing shore protection with artificial constructions, the river foreshore is in a semi-natural state with a relatively extensive agricultural use.

The development of the Weser estuary for shipping, the embankment of river banks and harbor and industrial developments have resulted in significant alterations in morphology, hydrography, flora and fauna. One of the consequences is that the deposit of mud in the outer part of the estuary is larger than in the natural situation and also, that a cloud of dispersed material has emerged.

Dredging and embankment of the river Elbe, and the concomitant developing of industries and harbors in the area, have significantly changed the ecological system. There are only very few sites in the estuary which can be regarded as natural or undisturbed. The remaining foreshore areas are protected by artificial groins and may be defined as semi-natural foreshore areas.

The Varde Å estuary has been maintained unregulated, whereas the agricultural use of the marshes and meadows has been intensified.

## How to proceed

The relevant policies for water and sediment and brackish marshes also apply to the relevant elements of the estuaries.

In considerable parts of the German estuaries, human use has the priority. Shipping routes and harbors are to be managed for their intended purposes. It is, nevertheless, necessary to maintain and restore ecological functions of the estuaries. To this end, a concept is currently being worked out for the German estuaries with the aim to examine possibilities for protection of valuable parts and maintain and, as far as possible, restore the river banks to their natural state.

In the Varde Å estuary, an extensification of the current agricultural use is the aim and a restoration project has been initiated.

Assessments of the environmental impacts of new activities, compensation and mitigation, and restoration projects are central elements in policy and management. Where necessary, the protection of valuable parts of the estuaries not yet protected must be undertaken.

The sluicing regime must be modified in some areas to obtain a more regular volume of fresh water drained off from the mainland and to ensure better opportunities for migrating fish.

## 6.1 Trilateral policy and management

The policies for important elements of the estuaries, i.e. the water, the salt and brackish marshes, and the rural area, have been formulated in Chapter 2, 3, 8 and 9 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.

6.1.1 The extension, or major modification, of existing harbor 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. In the Conservation Area, new, not yet approved plans for new construction, as well as for the extension or major modification of existing harbor and industrial facilities, are not allowed unless such is necessary for imperative reasons of overriding public interest and if no alternative can be found. (Identical with 4.1.5).

6.1.2 The deepening of shipping lanes in the estuaries will be carried out in conjunction with an overall assessment of how to compensate and mitigate the measures.

6.1.3 The impact of dumping dredged materials will be minimized. Criteria are, amongst others, appropriate dumping sites and/or dumping periods. (Identical with 4.1.15).

6.1.4 Valuable parts of the estuaries will be protected and river banks will remain and be restored in their natural state, as far as possible.

6.1.5 The transition zone between fresh and salt water should be as natural as possible.

## 6.2 Trilateral projects and actions

6.2.1 A joint report of existing inventories and their results to determine the valuable parts including river banks and the legal and/or administrative protection of valuable areas in the estuaries. The results will be discussed on a trilateral level, for example, to determine possibilities for restoration projects including the restoration of transition zones.

6.2.2 The results of a Dutch study into the best locations for the restoration of estuarine transition zones (potential areas: Westerswoldse Aa, IJsselmeer, Amstelmeer, Lauwersmeer and polders) where fresh/salt water exchange takes place (pumping stations) will be evaluated, after which additional measures might be taken.

6.2.3 In Lower Saxony, a concept is currently being worked out for the German estuaries with the aim to examine possibilities for the protection of valuable parts and maintain and, as far as possible, restore the river banks to their natural state.

6.2.4 A trilateral evaluation of the results of the above mentioned studies which will be taken into consideration in the further elaboration of the Plan.

6.2.5 The initiation of a project, in close cooperation with responsible port authorities, with the aim of investigating how harbor developments and environmental protection can be reconciled.

6.2.6 The evaluation of the running reintroduction project of the Houting in Denmark and Schleswig-Holstein and the consideration of further actions in other rivers of the Wadden Sea.

6.2.7 The restoration of the Varde Å estuary through extensifying agricultural use and restoring natural hydrological conditions.

# 7 Offshore Area

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The offshore zone ranges from the 3-sea-mile line to an artificial line connecting the outer tips of the islands. The border between the offshore zone and the beaches on the islands is determined by the average low-tide-water mark (Leeuwarden Declaration Annex I).

## Status

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 North Sea up till the 20 m isobath, into the Wadden Sea and this transport is determined by the overall water circulation. The area is important for foraging and moulting ducks, for seals and Harbour Porpoises.

There is little experience within the trilateral cooperation with the management of the offshore area. Parts of the German national parks are situated in the offshore area. The whole of the Danish offshore part of the Wadden Sea Area has a protected status. In the Schleswig-Holstein part, oil and gas exploration and exploitation are allowed only in the concession area of the Mittelplate.

In the Danish offshore area, shell fishery on species other than mussel, cockle and shrimp, is not allowed. In those parts of the German offshore area which belong to the national parks, the extraction of sand is, in principle, not allowed. As to cockle fishery, it is not planned to grant permits. Further restrictions to human use have not been imposed.

The offshore area in The Netherlands, as a part of a zone up to the 20 m isobath, is defined as the Environmental Zone: an area for which a special level of protection is offered in order to contribute to the protection, recovery and development of the entire North Sea and Wadden Sea ecosystems.

## Targets

An increased natural morphology, including the outer deltas between the islands.

A favorable food availability for birds.

Viable stocks and a natural reproduction capacity of the common seal, grey seal and harbour porpoise.

## Assessment

Because the natural dynamics in the tidal area are directly related to coastal defence activities on the mainland coast, the islands and the offshore zone, future coastal protection policies should, as a principle, be based on these currently better understood interrelationships and taken into account in coastal protection management.

The extraction of sand is not, in all cases, regulated on the basis of the importance of the offshore area and, more specifically, the area up till the 20 m isobath, for the overall Wadden Sea sand balance.

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 (e.g. *Spisula* fishery). At the Leeuwarden Conference, it was therefore decided to investigate shellfish stocks (e.g. *Spisula*) and the impact of fishery on the benthic stocks outside the islands and, depending on the outcome, discuss the results on a trilateral basis with the aim of safeguarding the food stocks for birds (LD §54).

It was, furthermore, decided to investigate the possibilities of a common research project on the effects of shrimp fishery (including industrial shrimp fishery) and flatfish fishery on the bottom fauna, within the realm of national competencies, with the aim to define trilateral proposals in 1997, and to consider, depending on the outcome of the investigations, further regulations, including the possibility of closing parts of the German and the Dutch Wadden Sea (LD §51).

As has become clear from the recently finalized Joint Seal Project, Common Seals spend part of their time in a zone up to 20 km offshore. 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 near Sylt seems to have become an important rearing area for Harbour Porpoises.

## How to proceed

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 tuned carefully.

Policies for safeguarding the food situation for birds are necessary for the whole offshore area and will be developed on the basis of the results of currently running research projects.

The management of seals in the offshore area is covered by the Seal Management Plan (see Chapter 10). This plan will be amended and updated at regular intervals.

In view of the high numbers of Harbour Porpoises in the offshore area, policies aiming at stimulating this development, especially in rearing areas, will be initiated.

## 7.1 Trilateral policy and management

7.1.1 Future coastal protection policies will, as a principle, be based on an integrated approach to coastal defence activities on the mainland coast, the islands and the offshore zone.

7.1.2 Increased attention will be given to the role of the offshore zone in the total Wadden Sea sand balance.

7.1.3 Sand extraction will only be carried out from outside the Wadden Sea Area. Exemptions for local coastal protection measures may be granted, provided it is the Best Environmental Practice for coastal protection.

## 7.2 Trilateral projects and actions

7.2.1 A study into the possible effects of enhanced sea level rise by a Trilateral Expert Group to be established under the coordination responsibility of the competent authorities and, on the basis of these studies, the development of proposals for future integrated coastal defence and nature protection policies. (Identical with 3.2.1, 4.2.1, 5.2.2).

7.2.2 An investigation on shellfish stocks (e.g. *Spisula*) and the impact of fishery on the benthic stocks, seaward of the islands and, depending on the outcome, a discussion of the results on a trilateral basis with the aim to safeguard the food stock for birds.



# 8 Rural Area

The rural area includes meadows and arable land on the islands and on the mainland where there is a strong ecological relationship with the Wadden Sea (Leeuwarden Declaration Annex I).

Strong ecological relationships with the Wadden Sea can obviously be determined, if the area provides physical and biological factors essential to typical Wadden Sea species, such as some bird species. Man has influenced these areas, e.g. meadows, grassland and pasture land, by mowing and grazing by cattle, horses and sheep, as well as, by the cultivation of fields with crops such as grain, potatoes and rape. Human use has priority in major parts of the rural area.

## Status

Migratory birds, such as some waders, ducks and geese species, use rural areas on the islands and on the mainland behind the dikes 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 Whimbrel, 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, rural areas such as meadows and arable land on the islands and on the mainland behind the dikes are used as alternative high-tide roosting sites, if the roosting sites in front of the dikes are not available during too high water.

## Targets

Favorable conditions for flora and fauna, especially migrating and breeding birds.

## Assessment

All habitats which are used by one typical Wadden Sea bird species are linked to, and depending on, each other. All these habitats are important for the different species during various periods and are essential for the natural development of these species in the Wadden Sea. This aspect should be taken into consideration while designing a management strategy for the protection of different bird populations.

Feeding areas and appropriate roosting sites on the tidal flats or salt marshes should be available in a sufficiently close distance to the breeding sites of species (e.g. Lapwing, Oystercatcher, Black-tailed Godwit) which breed in rural areas behind the dikes, such as meadows, and arable land.

The herbivores Widgeon Barnacle Goose and, to a lesser extent, Brent Goose, use meadows and arable land as feeding areas during the period September/October to March/April. A shift in habitat use from traditional natural feeding areas, such as eelgrass 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. The concerned species have been forced to feed on agricultural grassland areas because of losses, changes and/or disturbance of the natural habitats. The natural habitats have been reduced in quality and quantity by impacts of agriculture, industry, flood control and recreational use. Human disturbance from increasing recreational use of the land in front of the dikes and tidal flats results in more intensive utilization of the rural areas.

At night, marshes, grasslands and fields behind the dikes are heavily utilized by Widgeons, especially when not disturbed. 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 dependant on the management of the concerned area, but also on the management of habitats and geese elsewhere. The developments in agricultural use (e.g. set aside or transformation of meadows to farmland) also have consequences in the use by geese and ducks.

## 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 favorable conditions for the concerned bird species.

## 8.1 Trilateral policy and management

Wind energy and agricultural use are the main relevant human activities regarding the Target 'favorable conditions for birds in rural areas'.

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.

Currently, an "International Flyway Management Plan Dark-bellied Brent Goose" (single species Action Plan in accordance with the AEWA) is being elaborated and will be submitted to the next Trilateral Governmental Conference.

## Agricultural use

8.1.1 Sustainable agriculture for improving nature conservation, maintaining typical landscape elements and protection of cultural heritage will be supported, amongst others, financially.

8.1.2 Nature areas reclaimed for agricultural purposes should be restored, where possible, through voluntary cooperation with, and active participation of, the owners.

8.1.3 Initiatives of the agricultural sector aiming at reducing the application and unintended impacts of pesticides and other toxic substances and fertilizers in the rural area will be supported, amongst others, financially.

## 8.2 Trilateral projects and actions

8.2.1 A discussion with local farmers in the polder areas to decide on the most promising farming methods for the long and the short term with the aim of combining the Targets with sustainable agriculture.

8.2.2 An exploration of the possibilities for sustainable agriculture and for the combination of agriculture and nature management in the rural area.



# 9 Birds

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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 and should thus be taken into consideration while designing a management strategy for the protection of birds/different bird species/populations. Therefore, the bird Targets, including their subtargets, are, more or less, relevant for all habitat types in the Wadden Sea Area.

Management measures which have a habitat-crossing character, as well as measures for bird species which have their main distribution in a specific habitat type, will be addressed.

## Status

The conservation status of birds in the Wadden Sea Area is primarily determined by weather conditions, food availability, disturbance, as a result of various human activities, and by pollution, in particular, by heavy metals, organic micro-pollutants and oil.

High numbers of moulting ducks and geese are present in the Wadden Sea Area every year. These birds are flightless during moult and extremely susceptible to disturbance. The herbivores Widgeon, Barnacle Goose and, to a lesser extent, Brent Goose, use meadows and arable land as feeding areas during certain periods of the year. A shift in habitat use from traditional natural feeding areas, such as eelgrass beds and salt marshes to agricultural land, occurred and resulted in damage of agricultural land and in conflicts with farmers. The breeding populations of particularly threatened species such as Kentish Plover and Little Tern are highly dependent on habitats, like sandy beaches and primary dunes. The offshore-area is an important feeding, roosting and moulting area for divers, Eider and other seaducks, such as Common Scoter.

## Targets

Favorable conditions for migrating and breeding birds:

a favorable food availability;

a natural breeding success;

sufficiently large undisturbed roosting and moulting areas;

natural flight distances.

## Assessment

### Favorable food availability

A favorable food availability for birds is aimed for. Based on the guiding principle, unnatural food resources for birds should be avoided. However, as long as unnatural food resources are present in the Wadden Sea Area, they should be accepted as part of the system and as a natural component of the particular ecosystem.

A number of human activities interfere with the natural food availability of certain bird species. This interference may have consequences for the food availability in years with low shellfish stock. Activities which increase the food availability for certain species and favor some species with further consequences for the entire community structure should be addressed. This concerns fishery discards, landfill dumps in the vicinity of the Wadden Sea Area, eutrophication, as well as, agricultural practices in island polders and areas behind the dikes.

### Natural breeding success

Under the parameter "natural breeding success" also, the importance of natural habitats as a condition for natural distribution and densities of breeding birds and their breeding success should be taken into consideration.

Natural distribution and densities of breeding populations are especially important for endangered bird species highly dependent on sandy beaches and primary dunes (Kentish Plover, Little Tern). The present breeding populations of these species are particularly threatened and severely reduced compared to their former (natural) sizes.

In general, the reproduction success of breeding birds in the Wadden Sea Area should not be influenced by human factors (i.e. chemical pollution, disturbance). Hatching and breeding success are, generally, more influenced by disturbance and natural factors, i.e. weather conditions, flooding and predators, than by pollutants. However, also factors like predator density and the frequency and level of flooding may be affected by human activities (building of dikes and dams to islands, causing an increase of ground predators).

## Sufficiently large undisturbed roosting and moulting areas

Sufficient numbers of large undisturbed roosting sites in the Wadden Sea Area should be distributed along the whole coastline and they should not lie far apart, and in close proximity, to the feeding area. A criterion for the size of an undisturbed roosting area should be that birds can roost there without being disturbed by human activities outside the area.

Besides food availability, the lack of disturbance is the primary factor favoring high numbers of Shelducks and Eiders to moult in a specific area. These birds are unable to fly during moult and are extremely susceptible to disturbance with escape/flight distances up to some kilometers. Boats, and other sources of disturbance, have a strong influence on the present distribution of moulting ducks in the Wadden Sea Area.

## Natural flight distances

"Flight distance" is the distance between a bird and a human disturbing factor to which the bird reacts by fleeing. Though the "natural" flight (escape) distances of birds in the Wadden Sea Area are not known, the present flight distances, which are a reaction to human disturbance, can be regarded as long because the birds have experienced man as an enemy. These unnaturally long flight distances cause other human activities to work as disturbance as well, which would often not cause effects if the flight distances were shorter. On the other hand, the possibilities of habituation of birds in "safe" areas must be taken into account.

Human activities which may disturb are, inter alia, hunting, some military activities, recreation, air traffic and wind turbines. The disturbance by military and civil air traffic has been reduced by the introduction of minimum flight altitudes. The shooting ranges at Den Helder, Noordvaarder and Sylt have been abolished.

## 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, garbage deposits close to the Wadden Sea Area, 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.

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 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 should be improved. The same is valid for migrating and moulting birds. Safe 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.

Flyway-Cooperation Agreements have already been established with The Wash and Guinea Bissau. In the framework of the African-Eurasian Waterbird Agreement, international conservation plans will be compiled for long-distance migrating waders and various other species.

## 9.1 Trilateral policy and management

Bird conservation and management, at the general trilateral policy level, is subordinated to the Guiding Principle, i.e. a natural and, as far as possible, dynamic Wadden Sea, even if natural dynamics may lead to less favorable conditions for some bird species or populations. That means, that the Guiding Principle is more important than special conservation measures for certain species.

General points regarding the flyway cooperation and also specific measures for the management of different human activities which have effects on breeding and migratory bird populations in the Wadden Sea Area were already laid down in the Esbjerg and the Leeuwarden Declarations.

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

9.1.1 The conditions for breeding birds will be improved by appropriate management.

9.1.2 It is the aim to improve the conditions for migratory birds during roosting and feeding, as well as, for seaducks in the offshore area during moulting, through integrated management.

### Interference with the food conditions for birds

#### Mussel and cockle fishery

9.1.3 The negative effects of cockle fishery are being limited by:

- Cockle fishery is not allowed in the German part of the Conservation Area;
- Cockle fishery is not allowed in the Danish part of the Wadden Sea Area, with the exception of some small areas along the Esbjerg shipping lane and in the Ho Bay;
- Cockle fishery is allowed in the Dutch part of the Wadden Sea Area, but has been limited by the permanent closure of considerable areas; there are possibilities for additional restrictions to safeguard food for birds. A co-management scheme with the fishing industry is in operation, in which the protection and enhancement of the growth of wild mussel beds and *Zostera* fields are central elements. (Identical with 4.1.16).

9.1.4 The negative effects of mussel fishery are limited by the permanent closure of considerable areas. In addition, the management of fishery on mussels aims, inter alia, at protecting and enhancing the growth of wild mussel beds and *Zostera* fields. (Identical with 4.1.17).

9.1.5 Mussel fishery will, in principle, be limited to the subtidal area. Based on national management plans, which are documented in the Progress Report, fishery on the tidal flats may be granted. The fishery sector is called upon to exchange information on the existing practices and to investigate possibilities for minimizing impacts of mussel fishery, in general, and seed mussel fishery, in particular. (Identical with 4.1.18).

## Acoustic and visual disturbance

### Disturbances due to recreational and other human activities

9.1.6 Disturbance in significant breeding areas will be reduced and access to these areas will be made more predictable for birds, i.e. using only certain footpaths on salt marshes, beaches and dunes (information system for visitors).

9.1.7 It is the aim to 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 protection measures

9.1.8 Driving cars in breeding areas on beaches and in dunes is prohibited.

### Wind energy

9.1.9 The construction of wind turbines in the Conservation area is prohibited. (Identical with 1.1.4).

9.1.10 The construction of wind turbines, in the Wadden Sea Area outside the Conservation Area, is only allowed, if important ecological and landscape values are not negatively affected. (Identical with 1.1.5).

### Hunting

9.1.11 Hunting of migratory species has been, or will be, progressively phased out in the Conservation Area or in an ecologically and quantitatively corresponding area in the Wadden Sea Area.

9.1.12 Lead pellets will not be used in the Wadden Sea Area.

9.1.13 Hunting of non-migratory species is, in principle, only allowed in the Conservation Area, if migratory species are not harmed.

### Civil air traffic

9.1.14 The impact of civil air traffic in the Wadden Sea Area will be limited.

9.1.15 New civil airports will not be constructed in the Wadden Sea Area.

9.1.16 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.

9.1.17 A minimum flight altitude of civil air traffic of 1,500 to 2,000 feet (450 - 600 m) is established in the Wadden Sea Area. Exemptions can be granted for safety reasons and will be confined to designated flight corridors situated in less vulnerable parts of the Wadden Sea Area.

9.1.18 The use of ultra-light aircraft will be prohibited in the Wadden Sea Area pending national legislation, with the exception of scientific and enforcement purposes.

9.1.19 Advertisement flights are, in principle, prohibited in the Wadden Sea Area.

9.1.20 Helicopter flight routes and altitudes are established in such a way that the disturbance to wildlife is minimized in the Wadden Sea Area.

### **Military activities**

9.1.21 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.

9.1.22 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.

9.1.23 Action to minimize disturbance caused by military air traffic in the Wadden Sea area will be taken on a coordinated basis.

9.1.24 High priority will be given to the assignment of redundant shooting ranges as nature protection areas.

## **9.2 Trilateral projects and actions**

9.2.1 An inventory of all important and potential roosting sites along the coastline of each country, in conjunction with an evaluation of available knowledge on the necessity for undisturbed roosting sites, in order to investigate the possibilities for creating undisturbed roosting sites.

9.2.2 An evaluation of available knowledge on the necessity of undisturbed moulting sites for seaducks in the offshore area, in order to investigate the possibilities for creating such undisturbed moulting sites, aiming at improving the conditions during moulting.

9.2.3 An investigation into the possibilities to come to a coordinated management for herbivorous species (e.g ducks and geese) on inland sites.

9.2.4 The exploration of possibilities for improving the conditions for breeding birds in dunes and on beaches in cooperation with responsible authorities, especially on the local level, and relevant groups, with the aim to discuss the results and to take appropriate measures.

9.2.5 An inventory and assessment of the reduction of disturbance caused by military activities in the three countries.

# 10 Marine Mammals

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The 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 Common Seal uses other habitats than water, such as sand banks in the tidal area and beaches, the Grey Seal uses also dunes and salt marshes. All these habitats are essential for the maintenance of the vital biological functions of seals, such as whelping, nursing, breeding, moulting and feeding.

The species groups with an overlapping habitat demand, such as marine mammals and birds, need special attention because of their vulnerability to disturbance and pollution, and a possible food resource competition with Man. As top predators, these species have an important indicative function of the quality of the Wadden Sea ecosystem. Seals are the ambassadors and most attractive species of the Wadden Sea Area. Therefore, the opportunity for tourists to observe seals in their natural environment should be maintained.

## Status

The present and short term conservation status of Common Seals, Grey Seals and Harbour Porpoises in the Wadden Sea Area is primarily determined by two developments: disturbance, as a result of various human activities (such as tourism and recreation activities, air traffic, some military activities) and pollution, in particular, by heavy metals and organic micro-pollutants. The present situation regarding food supply does not influence the conservation status of seals. Whilst measures to reduce pollution have to be taken mainly outside the Wadden Sea Area, measures to protect seal habitats have to be achieved within the area itself by creating seal reserves in such a way that disturbance is limited to a minimum.

In the years after the virus epidemic in 1988, the population of the Common Seal has shown a rapid recovery. During coordinated flights in the entire Wadden Sea Area, a total of 12,927 seals was counted in 1997, of which 2,783 were pups.

Today, two Grey Seal breeding sites exist in the Wadden Sea Area. One near the island of Vlieland in The Netherlands with about 315 animals, where at least 30 pups are born each year, and one small reproductive colony of about 30 to 40 animals in Schleswig-Holstein, Germany.

According to sightings, the Harbour Porpoise mainly inhabits coastal waters not deeper than 20 m.

Systematic aerial and shipping surveys, which were carried out in the framework of the European Commission project SCANS and a project of the University Kiel in the entire North Sea and parts of the Baltic Sea, have documented that the area west of the Knobsände off Amrum and the island of Sylt is the most densely populated one within the German Bight. Long-term surveys

carried out by volunteers on the islands Amrum and Sylt, documented that Harbour Porpoises in this area also occur directly near the beach the whole year round. Compared to other parts of the North Sea, there is an extraordinarily 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.

## Targets

Viable stocks and a natural reproduction capacity of the Common 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.

## Assessment

The term “viable stocks” has to be specified in such a way that a connection with management is possible. The numbers that can be expected according to the natural carrying capacity of the Wadden Sea Area depend on factors that are defined by the fish stocks in the North Sea, suitable undisturbed haul-out sites and on the effects of diseases and parasites in dense populations. The absence of significant human impact on the population, to be judged and monitored in the course of years, is the standard for the first part of the Target.

The “natural reproduction capacity” of seals depends on many factors - water quality, disturbance, population size - and can, probably, not be expressed by a simple number or range. Based upon regular best experts judgement, it will have to be assessed whether the reproduction can be regarded as natural. This second part of the Target is one of the main, still not really solved, problems of the last decades: the reduced reproduction rates due to PCBs and other organic micro-pollutants. The production of 0,85 - 0,95 pup per mature female per year is the proposed reference for the natural reproduction capacity.

In terms of numbers, the present Common Seal population is regarded as viable. However, the juvenile mortality is very high (over 40% instead of 20 - 25%). Despite the good protection of the main resting and nursing places, the environmental conditions are still not satisfactory.

The present Grey Seal population in the Wadden Sea Area cannot be regarded as viable. The stock in The Netherlands mainly grows because of immigration from Great Britain. Grey Seals need high sands (not flooded during high tide) or beaches and salt marshes during whelping and nursing. There ought to be means to keep areas free of interference in a flexible way. Furthermore, there is not enough knowledge about the natural reproduction capacity of Grey Seals in the Wadden Sea Area.

For Harbour Porpoises, a detailed assessment is not yet available due to limited knowledge. Small cetaceans are especially sensitive to disturbance and effects from high-speed boats (e.g.

jet-skis) and to the impact of fishery (by-catch). Possible effects of leisure boats and ships are strong underwater noise, which disturbs the communication and orientation system of small cetaceans, the risk of collision with high-speed boats, which can hardly be located by whales, and disturbance causing permanent separation of mother and calf.

By-catches from fishery are a main threat to Harbour Porpoises. Based on an extrapolation, the number of animals killed in Danish gill-nets in the whole North Sea is some 7,000 animals per year.

## How to proceed

Both with regard to the chemical and physical conditions - i.e. disturbance level - of the habitat of Common and Grey Seals, as well as, Harbour Porpoises, improvements are necessary.

For a better assessment of the status of the Grey Seal in the Wadden Sea Area, the general knowledge on reproduction and mortality should be improved. The same holds true for Harbour Porpoises because, at present, there is not enough knowledge about this species to be able to develop references, neither for viable population nor for natural reproduction parameters.

## 10.1 Trilateral policy and management

### Common 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 favorable conservation status for the Common 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 1996 - 2000. The latter also includes additional measures for the protection of the Grey Seal.

Regarding the implementation of the Targets for the Common and the Grey Seal, reference is made to the specific measures related to the different habitat types and, especially, to the Seal Management Plan 1996 - 2000. The revised Seal Management Plan is based on a comprehensive evaluation of the first Seal Management Plan 1991 - 1995, as well as, the results of the Joint Seal Project and the principles and guidelines concerning taking of seals, rehabilitation and releasing of seals, which are given in the § 60 of the Leeuwarden Declaration. (See LD §56 - 60; Conservation and Management Plan for the Wadden Sea Seal Population 1991 - 1995, ED §26; Conservation and Management Plan for the Wadden Sea Seal Population 1996 - 2000, SO March 1996).

Measures for the implementation of the Targets on seals are especially listed under "Required effort and objectives" and "Actions in 1996 - 2000" in the Seal Management Plan 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. In the following, the existing trilateral decisions, which have already been taken in the Esberg and Leeuwarden Declarations, are mentioned and some

new proposals regarding trilateral policies, management measures and actions are listed. The general management measures regarding specific habitat types such as tidal area, salt marsh and offshore area, can also be relevant for marine mammals in general.

According to the Leeuwarden Declaration §61, the principle and guidelines “to reduce the current number of seals taken from, and released to, the Wadden Sea to the lowest level possible” should also apply to the Grey Seal. Therefore, the “Conservation and Management Plan for the Wadden Sea Seal Population 1996 - 2000” (Senior Officials, March 1996) includes “Additional measures for the protection of the Grey Seal”.

### Harbour Porpoise

This species was not taken into special consideration during the decisions of the last Trilateral Governmental Conferences. In the framework of the Agreement on the Conservation of Small Cetaceans of the Baltic and the North Sea (ASCOBANS), the Harbour Porpoise was included and the Wadden Sea Conferences welcomed the agreement and the cooperation with its respective bodies (ED §28 and LD §63).

10.1.1 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.

10.1.2 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.

## 10.2 Trilateral projects and actions

10.2.1 The consideration, on the basis of scientific evidence, of the designation of areas in the Wadden Sea Area and adjacent areas off Sylt and Amrum, as well as, in the Danish part, as areas of special concern, especially as breeding/rearing area for the protection of the Harbour Porpoises.

10.2.2 An investigation, in consultation with responsible local governments and relevant groups into the available possibilities for closing, in a flexible way, areas where Grey Seal pups rest regularly.

10.2.3 An investigation of technical solutions and improvements in consultation with responsible fishery groups, for the prevention of incidental catch of marine mammals in drift nets and set nets, with the aim of minimizing by-catch.

# Appendix I Maps

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See German version.



# Appendix II

## Index of Activities

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The following activities have been distilled from part II of the Plan to provide an overview of the activities under each of the Targets. An activity may be addressed under more than one Target. The numbers refer to the paragraphs as entailed in part II.



Activity	1 Landscape and culture	2 Water and sediment	3 Saltmarshes	4 Tidal area	5 Beaches and dunes	6 Estuaries <sup>1</sup>	7 Offshore Area	8 Rural Area	9 Birds	10 Marine mammals
1 Agricultural use		2.1.2	3.1.1 - 3 3.1.11 3.1.13					8.1.1 - 3	9.1.7	
2 Civil air traffic									9.1.14 - 20	
3 Coastal protection			3.1.4 - 10	4.1.1 - 2 4.1.11	5.1.2 - 3 5.1.5 - 7		7.1.1 7.1.3		9.1.7	
4 Dredging and Dumping		2.1.6 - 7		4.1.6 - 8 4.1.11 4.1.15		6.1.2 - 3				
5 Energy resources										
5.1 Gas & oil		2.1.8 - 10	3.1.14	4.1.10	5.1.4					
5.2 Pipelines		2.1.9	3.1.16	4.1.13	5.1.4					
5.3 Wind energy	1.1.4 - 5								9.1.9 - 10	
6 Extration Sand & Clay			3.1.9	4.1.11 - 12			7.1.2 - 3			
7 Fisheries										
7.1 Cockle fishery				4.1.16					9.1.3	
7.2 Mussel fishery				4.1.17 - 19					9.1.4 - 5	
7.3 Other fisheries - Oyster culture				4.1.20						
8 Ground water extraction					5.1.10					
9 Harbor and industry		2.1.1	3.1.14	4.1.3 4.1.5	5.1.4	6.1.1				
10 Hunting									9.1.11 - 13	
11 Infrastructure			3.1.14 - 15	4.1.3 - 4 4.1.14	5.1.4					
12 Military activities									9.1.21 - 24	
13 Nature and landscape management	1.1.2		3.1.1 - 5 3.1.10 - 11		5.1.1 5.1.3 5.1.5 5.1.9	6.1.4 - 5	7.1.2	8.1.1 - 2	9.1.1 - 2 9.1.6 - 7	10.1.1
14 Pollution		2.1.1 - 10	3.1.13		5.1.8			8.1.3	9.1.12	
15 Public awareness	1.1.3		3.1.12	4.1.24					9.1.6	10.1.2
16 Recreation and tourism										
16.1 Watersport				4.1.21 - 24						
16.2 Other tourist activities			3.1.12		5.1.8				9.1.6 9.1.8	
17 Shipping		2.1.3 - 5		4.1.6 4.1.9 4.1.22 - 23						
18 Species/site protection	1.1.1		3.1.1		5.1.1	6.1.4			9.1.1 - 2	10.1.1

<sup>1</sup> The policies for important elements of the estuaries, i.e. the water, the salt and brackish marshes, and the rural areas, have been formulated in Part II, Chapter 1, 3, 8 and 9 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.



# Appendix III

## Glossary

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### Background concentration, Background value

Concentration of a substance in an environment not influenced by human activities.

### Baseline

Natural and artificial lines to calculate the seaward border of coastal waters and the extension of the territorial waters. It is the low water line along the coast or, where appropriate, an artificial line in the area of bays, estuaries or between islands. The baseline is defined according to the United Nations Law of the Sea of 1982 (Articles 3 - 16).

### Benthic stock

The total amount of all aquatic organisms living in, or on, the sea floor.

### Best Available Technique

The latest stage of processes, facilities or methods for limiting discharges and emissions of wastes, which is also practically feasible.

### Best Environmental Practice

The application of the most appropriate combination of environmental control measures and strategies ( OSPAR Convention 1992, Appendix I).

### Bio-accumulation

The accumulation in an organism, mainly in soft parts such as liver and muscles, but also in hard parts (bones etc.), of substances (e.g. heavy metals, pesticides) after passive or active uptake from the water.

### Biotope

An area, characterized by certain environmental conditions, in which different species and communities live and are interconnected.

### Brackish water limit

Border of seawater and freshwater in estuaries. The hydrographical brackish water limit is 0.5 PSU (practical salinity unit).

### Breeding success

Number of fledged young birds per year and breeding pair. To be differentiated from "hatching success", which means number of hatched birds of all eggs and "fledging success", which means number of fledged young birds of all hatched birds.

**Brushwood groyne**

See Groyne.

**By-catch**

Those organisms caught during fishing which are too small or are not the target species. When thrown back into the sea they are called "discard".

**Carrying capacity**

The maximum population of a given organism that a particular environment can sustain.

**Catchment area**

The area from which a certain river or a sea derives its water, e.g. all precipitation on this area finally flows into one certain river /sea.

**Co-management**

Co-management implies the involvement of stakeholders in the making and implementation of decisions about the management of e.g. fishery resources. It has two main features: consultation and delegation. Consultation between the central administration and the user groups about the contents of the management strategies and the delegation of specific management functions to responsible user group organizations. (Report of the Seminar on Co-Management, 9-10 January 1997, Groningen, NL).

**Cuttings**

Material formed during the drilling process, i.e. rock particles, sand etc. mixed with drilling muds (see drilling muds).

**Deepwater route**

Special routes with an international status which have been instituted for deep-draught ships and ships with dangerous substances in bulk.

**Discards**

Fishery offal and by-catch disposed of into the sea.

**Drilling muds**

Fluids used in drilling operations for cooling the drilling chisel and transporting cuttings to the surface. Drilling muds can either be based on water or oil. They contain various other components, e.g. heavy metals, bentonite, inorganic salts, surfactants, organic polymers, detergents, corrosion inhibitors, biocides, lubricants in the form of oil-water emulsions.

**Ecosystem**

Natural functional unit of organism, as well as, natural and artificial abiotic compartments which are interconnected concerning the exchange of energy, substances and information.

**Environmental Impact Assessment**

Comprehensive investigation of possible effects of projects or measures, with regard to the ecological impacts.

**Flight corridors**

Defined air corridors (height and width) to which air traffic is restricted.

**Flyway cooperation**

International cooperation concerning the East-Atlantic-Flyway of migratory birds between the countries of the flyway. The Flyway connects the breeding areas in the Arctic and the overwintering areas in West-Europe and West Africa.

**Gill-nets**

Rectangular nets used for passive fishery placed vertically in the water column.

**Green beach plains**

Beach area shielded by primary dunes enabling sparse vegetation.

**Groyne**

Construction built parallel or perpendicular to the coastline with the aim of enhancing sedimentation of fine-grained material and/or reducing wave and current energy. They may consist of brushwood, stone or concrete.

**Habitat**

The structural environment where a species naturally or usually lives or is found.

**Hydrofoil craft**

Boat / Vessel equipped with structures (plates or fins) which, when the boat is in motion, raise the hull out of the water, thereby reducing resistance and, consequently, allowing for higher

**Indigenous Wadden Sea species**

Species which have occurred naturally in the Wadden Sea for a long period of time. Contrary to non-indigenous species which have been imported by Man or which have immigrated into the Wadden Sea in recent times

**Intertidal area**

See Tidal flats.

**Ishohaline**

A contour line on a map connecting points of equal salinity (at a particular time).

**Isobath**

A contour line on a map connecting points of equal depth.

**Mound**

A heap, or a pile of earth, either natural or artificial; in this case, built by man in coastal areas, tide streams and estuaries for protection against storm tides.

**Oil-based muds**

See drilling muds.

**Operational discharges**

Discharges of oil, garbage and hazardous substances from ships during normal operation practices (in contrast to dumping and discharge). Regulated by the MARPOL Convention.

**Outer delta**

Outer deltas are underwater sand banks at the outer (North Sea) side of the tidal inlets between the islands. They are also called ebb deltas because they are formed during ebb-tide when water is transported from the Wadden Sea through the inlets to the North Sea. The sand, that is transported with the outflowing water, is deposited on the North Sea side of the inlet in an arch shaped form.

**Pioneer zone**

Transition area between salt marshes and tidal area, located between middle tide low water and middle tide high water, dominated by *Salicornia* and sometimes with scattered *Spartina* tussocks.

**Primary dunes**

Wind created sand accretion (up to 1 m), with or without sparse/scattered vegetation, dominated by sea wheat grass (*Agropyron junceum*). Transition phase in the development to secondary dunes (white dunes).

**Primary dune valleys**

Valleys parallel to the beach between two dune walls with wet conditions (at least in winter), increasing dominance of fresh water, sometimes also moor. Depending on local conditions, dune valleys have characteristic vegetations (wet heaths, rush and sedge swamps, as well as, aquatic and amphibic communities). Secondary dune valleys are created by blow-out and are located in wind direction.

**\*Primary production**

The production of living matter by photosynthesizing organisms (e.g., plants, plankton) or by chemosynthesizing organisms (e.g. bacteria). Usually expressed as grams of carbon per square meter per year, because carbon is a common element in all living matter.

**Resilience**

The ability to return to the original state (or original dynamic) after a temporary disturbance (e.g. natural events or human interference).

**Sabellaria reefs**

The tube building bristle-worm *Sabellaria spinulosa* forms sand reefs. This characteristic species of the subtidal channels disappeared almost completely. Only two recent observations of *Sabellaria* reefs are known (near the islands of Mellum and Amrum, Germany).

**Secondary dunes**

Up to 20 m high dunes. First stable stage of dune succession with vegetation; dominated by marram grass (*Ammophila arenaria*).

**Shore reception facilities**

Facilities in ports for the reception of oily and chemical residues and wastes from ships.

**Sluicing regimes**

Specific scheme according to which fresh water is sluiced into the sea at certain periods.

**Spring high tidewater line, spring low tide water line**

Highest, respectively, lowest water line during spring tide (which is caused by the summation of the gravitation of moon and sun during full-moon and new-moon).

**Stakeholders**

Any person, institution, organization, agency, department, authority, club, association etc. which has, in the broadest sense, an interest in, or association with, a particular issue.

**Subtidal**

Coastal area below the spring low tide water line, always covered by water (sublitoral).

**Sustainable use**

The use of components of biological diversity in a way, and at a rate, that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations (Convention on Biological Diversity, 1992).

**Synergism**

Interaction of several components, intensifying each other, e.g. influence of a combination of contaminants on organisms.

**Tidal basin**

System of tidal channels and tidal flats between two water sheds (see Water Shed) ranging from the dike to approximately the 20 m depth line.

**Tidal flat**

Area which is regularly flooded/covered by water during high tide (mud flat, eulitoral).

**Top predators**

Animals which feed on other animals and which are themselves not a prey for other species. The only exception is hunting by Man. Examples in the Wadden Sea are seals, foxes and several bird species.

**Water-based muds**

See Drilling muds.

**Watershed**

The area between two tidal basins. Water sheds have a higher elevation than other tidal flats and are flooded last.

**Xenobiotics**

Man made substances.

**Zostera fields**

Seagrass meadows or eelgrass fields (*Zostera marina* and *Z. noltii*) in the tidal area.



# Annex II

## Common Package TMAP

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# Common Package TMAP\*

<b>Contaminants</b>	<b>1</b>	TBT in water and sediment
	<b>2</b>	Metals in sediment
<b>Nutrients</b>	<b>3</b>	Inorganic nutrients in water
<b>Salt Marshes</b>	<b>4</b>	Spatial extension
	<b>5</b>	Agricultural utilization: grazing
<b>Benthos</b>	<b>6</b>	Macroalgae
	<b>7</b>	Eelgrass
	<b>8</b>	Macrozoobenthos communities
	<b>9</b>	Blue Mussel beds
	<b>10</b>	Contaminants in flounder
<b>Plankton</b>	<b>11</b>	Phytoplankton
<b>Fish</b>	<b>12</b>	Contaminants in blue mussels
	<b>13</b>	Mussel/Cockle/Shrimp fishery
<b>Beaches and Dunes</b>	<b>14</b>	Spatial extension
<b>Birds</b>	<b>15</b>	Breeding birds: numbers and distribution
	<b>16</b>	Breeding birds: contaminants in bird eggs
	<b>17</b>	Migratory birds: numbers of waterbirds in counting units
	<b>18</b>	Beached Bird Survey
<b>Seals</b>	<b>19</b>	Population parameters by aerial survey
<b>Recreational Activities</b>	<b>20</b>	Boats at sea
	<b>21</b>	No. of guided tours
	<b>22</b>	Air traffic
<b>General Parameters</b>	<b>23</b>	Coastal protection measures
	<b>24</b>	Geomorphology
	<b>25</b>	Flooding
	<b>26</b>	Land use
	<b>27</b>	Weather conditions
	<b>28</b>	Hydrology

\* The parameters in the Common Package will be monitored according to the agreed common TMAP Guidelines.



# Annex III

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Memorandum of Intent  
Guinea-Bissau - Wadden Sea  
Work Program 1998 - 2000



# An interim outline on a three-year work program 1998-2000

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## Objective

The program is designed to encourage an international interchange of knowledge and ideas and to develop a multi-disciplinary approach to nature protection and management issues.

The first step of the program will be to continue to train an ornithological team in Guinea-Bissau to carry out research and monitoring work, especially in the field of waders wintering in Guinea-Bissau and migrating to the Wadden Sea.

The next step of the program will be to establish an organization for ornithological research, monitoring and public information in Guinea-Bissau, which will be able to continue the work initiated.

## Projects

### Project 1

#### **Subject:**

Research, monitoring and surveys on waterbirds and important bird areas in Guinea-Bissau

#### **Objective:**

To train an ornithological team in Guinea-Bissau to carry out the following tasks:

- a) To provide data on the abundance and species composition of waterbirds by monthly counts on tidal flats of Bubaque, Soga, and Orango, and in the Ramsar site Lagoa de Cufada.
- b) To monitor changes in abundance and species composition of waders by making a survey of the whole coastal zone of Guinea-Bissau as complete as possible every third year, next time in 1999.
- c) To provide data on the breeding colonies of shorebirds by visiting selected uninhabited islets of the Bijagos Archipel 3 to 4 times per year.
- d) To provide data on Important Bird Areas (IBA-sites) in Guinea-Bissau as a part of current international programs.
- e) To formulate preliminary management policy proposals.

#### **Contents:**

Education and training of an ornithological team in Guinea-Bissau in 1998-2000. Liaison between scientists and technicians in the Wadden Sea States and Guinea-Bissau to collect data on monthly counts from 1998 to 2000, to make a survey of IBA-sites in 1998, to make a full survey of waterbirds in the coastal zone in 1999, and to collect data on breeding colonies from 1998 to 2000.

**Participants:**

*Guinea-Bissau:* GPC, INEP, in cooperation with IUCN.

*Wadden Sea States:* Joint Monitoring Group of Migratory Birds in the Wadden Sea.

**Implementation:**

Education and training of an ornithological team in Guinea-Bissau by trilateral and Portuguese ornithologists in Guinea-Bissau from 1998 to 2000.

Survey of IBA-sites in 1998.

Survey of the whole coastal zone of Guinea-Bissau by trilateral ornithologists in cooperation with the ornithological team in 1999.

Elaboration of management policy proposals in 2000.

Publishing a brochure on the Memorandum, the areas and the work program to inform, amongst others, the authorities.

Exchange of information from 1998 to 2000.

**Estimated costs:**

1998-2000: 136,000 US\$

## Project 2

**Subject:**

Establishing an organization for ornithological research, monitoring, education and public information in Guinea-Bissau.

**Objective:**

To provide for the continuation of ornithological work in Guinea-Bissau in order to:

- conduct ornithological work of all kinds,
- undertake education and public information, and
- carry out awareness campaigns of the local population.

**Contents:**

Liaison between scientists and technicians in the Wadden Sea States and Guinea-Bissau to publish small books on birds for schools in Portuguese and/or Creole, to publish lists of birds of Guinea-Bissau, to publish brochures of sustainable use of flora and fauna etc., to carry out campaigns for collecting bird rings, handling data from bird rings etc.

**Participants:**

*Guinea-Bissau:* GPC, INEP, in cooperation with IUCN.

*Wadden Sea States:* Joint Monitoring Group of Migratory Birds in the Wadden Sea.

**Implementation:**

Establishing the organization in 1998.

Exchange of information from 1998 to 2000.

Elaborating and publishing a school booklet on the most common birds from 1999 to 2000.

Carry out awareness campaigns for bird rings from 1998 to 2000.

**Estimated costs:**

1998-2000: 20,000 US \$

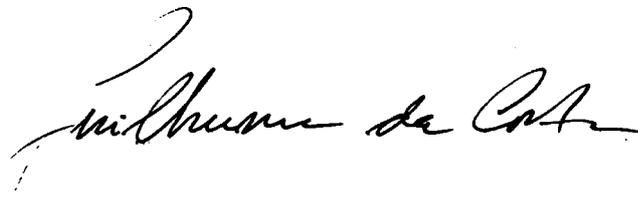
## Organizational aspect

The overall project manager is the National Forest and Nature Agency in Denmark and the Coastal Planning Office and INEP in Guinea-Bissau with the task

- to oversee the implementation of the projects;
- to ensure that it is in accordance with the planned budgets;
- to solve any matter of common concern.

The Contracting Parties shall review the results of the program based on a brief evaluation of the projects in 2000.

## Signatures



**Mr. G. Da Costa**

*National Director, Bureau of Coastal Planning of The Ministry of Rural Development, Natural Resources and the Environment on behalf of Guinea-Bissau*



**Dr. A. Merkel**

*Minister for the Environment, Nature Conservation and Nuclear Safety of The German Ministry for the Environment, Nature Conservation and Nuclear Safety on behalf of the Trilateral Cooperation on the Protection of the Wadden Sea*



# Programa de Trabalho 1998 - 2000

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Memorando de Intenções  
Guiné-Bissau - Mar de Wadden



# Esboço preliminar de um programa de trabalho de três anos 1998 - 2000

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## Objectivos

Este programa foi delineado para encorajar uma troca de conhecimentos e ideias a nível internacional e para favorecer o desenvolvimento de uma abordagem multi-disciplinar das questões ligadas com gestão e conservação da natureza.

Na primeira fase do programa, pretende-se prosseguir com as acções de formação e treino de um grupo de ornitologistas na Guiné-Bissau e com o desenvolvimento de actividades de investigação e seguimento, particularmente no que respeita às populações de aves limícolas que migram para o Mar de Wadden e que são invernantes na Guiné-Bissau.

Na segunda fase, pretende-se estabelecer uma organização fundamentalmente dedicada à investigação ornitológica e ao seguimento das populações de aves, que contribua para a sensibilização pública na Guiné-Bissau e que possa dar continuidade aos trabalhos iniciados.

## Projectos

### Projecto 1

#### **Finalidade:**

Investigação, seguimento e recenseamento das populações de aves aquáticas e inventário das áreas importantes para as aves na Guiné-Bissau.

#### **Objectivos:**

Dar formação e treino a uma equipa de ornitologistas na Guiné-Bissau cujas atribuições serão as seguintes:

- a) Providenciar dados sobre abundância e composição específica das populações de aves aquáticas, através da organização de contagens mensais a realizar em zonas de vasa localizadas nas proximidades de Bubaque, Soga, e Orango, bem como no Sítio de Ramsar da Lagoa de Cufada.
- b) Fazer o seguimento das variações numéricas e de composição específica das populações de aves limícolas, através de recenseamentos o mais abrangente possível, a realizar trienalmente ao longo da zona costeira da Guiné-Bissau, a começar em 1999.
- c) Três a quatro vezes por ano, providenciar dados sobre as colónias de aves aquáticas e marinhas nidificantes no Arquipélago dos Bijagós.
- d) Providenciar dados sobre as Áreas Importantes para as Aves na Guiné-Bissau, a integrar na rede internacional de recolha de informação "Important Bird Areas in Africa".
- e) Formular propostas para definição das políticas de gestão.

**Conteúdo:**

Formar e treinar uma equipa de ornitologistas na Guiné-Bissau entre 1998 e 2000. e providenciar dados relativos às contagens mensais a realizar entre 1998 e 2000. Realizar um inventário das Áreas Importantes para as Aves na Guiné-Bissau em 1998, realizar um recenseamento de aves aquáticas ao longo da zona costeira em 1999 e recolher informação e fazer o seguimento das colónias entre 1998 e 2000.

**Participantes:**

*Guiné-Bissau:*

GPC e INEP em colaboração com a UICN.

*Estados do Mar de Wadden:* Grupo de Seguimento das Aves Migratórias no Mar de Wadden.

**Implementação:**

Formar e treinar uma equipa de ornitologistas na Guiné-Bissau entre 1998 e 2000, recorrendo ao concurso de ornitólogos oriundos dos estados do Mar de Wadden e de Portugal.

Inventariar as áreas Importantes para as Aves na Guiné-Bissau em 1998.

Realizar um recenseamento de aves aquáticas ao longo da zona costeira da Guiné-Bissau em 1999 com a participação e o concurso de ornitólogos dos estados do Mar de Wadden e da equipa guineense.

Formular propostas para definição das políticas de gestão.

Publicar uma brochura informativa do público em geral e das autoridades em particular, sobre o Memorando, as áreas e o programa de trabalho.

Trocar informação entre 1998 e 2000.

**Custo estimado:**

1998 - 2000: 136,000 US\$

## Projecto 2

**Finalidade:**

Estabelecer uma organização dedicada à investigação ornitológica e ao seguimento das populações de aves, que deverá contribuir para a sensibilização pública na Guiné-Bissau.

**Objectivos:**

Continuar os trabalhos em curso na Guiné-Bissau, garantindo assim:

- a realização de actividades de índole variada na área da ornitologia,
- a promoção da educação e sensibilização pública e
- a realização de campanhas de alerta e esclarecimento da população.

**Conteúdo:**

Estreitar as relações entre investigadores e técnicos dos estados do Mar de Wadden e da Guiné-Bissau, tornando assim possível:

- a publicação de pequenos livros sobre a importância da conservação e estudo das aves em português e/ou crioulo, destinados às escolas,
- a publicação de listas actualizadas das aves da Guiné-Bissau,
- a publicação de brochuras sobre utilização durável da flora e fauna etc.
- a realização de campanhas para recolha de anilhas e informação sobre recapturas e/ou controlos de aves anilhadas etc.

**Participantes:**

*Guiné-Bissau:* GPC e INEP em colaboração com a UICN.

*Estados do Mar de Wadden:* Grupo de Seguimento das Aves Migratórias no Mar de Wadden.

**Implementação:**

Criar a organização em 1998.

Troca de informação entre 1998 e 2000.

Elaborar e publicar entre 1999 e 2000, um pequeno livro sobre asaves mais comuns da Guiné-Bissau, destinado à população estudantil.

Realizar campanhas de sensibilização para recolha de anilhas e informação sobre recapturas e/ou controlos de aves anilhadas, entre 1998 e 2000.

**Custo estimado:**

1998 - 2000: 20,000 US\$



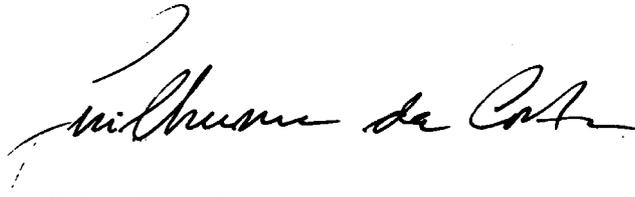
## Organização

A administração e gestão dos projectos cabe à "National Forest and Nature Agency" da Dinamarca e ao "Gabinete de Planificação Costeira" e "Instituto Nacional de Estudos e Pesquisa" da Guiné-Bissau que assumem conjuntamente a responsabilidade de:

- supervisionar todo o processo de implementação dos projectos;
- garantir que o processo de implementação se desenvolve de acordo com os orçamentos aprovados;
- resolver quaisquer questões de interesse mútuo que possam surgir.

Às partes contratantes compete uma revisão dos resultados do programa com base numa breve avaliação dos projectos a realizar no ano 2000.

## Assinaturas



(pela Guiné-Bissau)

**Mr. G. Da Costa**

*National Director, Bureau of Coastal Planning of The Ministry of Rural Development, Natural Resources and the Environment on behalf of Guinea-Bissau*



(pela Cooperação Trilateral para a Protecção do Mar de Wadden)

**Dr. A. Merkel**

*Minister for the Environment, Nature Conservation and Nuclear Safety of The German Ministry for the Environment, Nature Conservation and Nuclear Safety on behalf of the Trilateral Cooperation on the Protection of the Wadden Sea*