International Conferences on the Protection of the North Sea

The North Sea

An Integrated, Ecosystem Approach for Sustainable Development


The North Sea
The North Sea is a rather shallow semi-enclosed basin of continental shelf water. Its depth ranges from about 30 m on average in the southeast to 200 m in the northwest.
Parties in the North Sea cooperation:
Belgium, Denmark, France, Germany, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and the European Commission. In addition, neighbouring countries, intergovernmental organizations and NGOs take part as observers.
NORWAY
SWEDEN
Oslo
Stockholm
DENMARK
Copenhagen
UNITED KINGDOM
London
NETHERLANDS
Amsterdam
Brussels
BELGIUM
GERMANY
Berlin
POLAND
CZECH REP.
Paris
FRANCE
AUSTRIA
Berne
SWITZERLAND
0
100
200
300 km

The states bordering on the North Sea have been successful in developing a regional cooperation for the sustainable management of the North Sea ecosystems and its living resources. The process towards integrating fisheries management and environmental protection, conservation and management measures based on an ecosystem approach has been a very promising experience.

Over the years since the first International Conference on the Protection of the North Sea in 1984, the North Sea states have achieved good results in their joint efforts to reduce pollution and to protect North Sea ecosystems. Some examples of partly or fully implemented commitments are:

- ban on the dumping and incineration of waste at sea
- reduction of inputs of nutrients by 50%
- cessation of all inputs of hazardous substances within one generation (by the year 2020)
- ban on the dumping of offshore installations
- ban on the application of TBT.

The success of the North Sea cooperation is the result of a combination of several elements:

- cooperation on a regional level between states which have a common interest in protecting common resources
- frequent meetings at political level
- political commitments without legally binding enforcement
- broad and comprehensive approach
- willingness on the part of ministers to commit themselves to ambitious targets
- transparency and the active participation of all stakeholders, including industry and NGOs
- comprehensive reviews of progress.

One of the main challenges for the future is to develop and make use of an integrated ecosystem-based approach in the management of the North Sea.

Background

The North Sea is a rather shallow semi-enclosed basin of continental shelf water. Its depth ranges from about 30 m on average in the southeast to 200 m in the northwest.

Although the North Sea is small, its productivity and fish catches are among the highest in the world, and fishing has long been an important activity in all countries bordering the North Sea with total annual landings of fish around 2.5 million tonnes.

The densely populated Europe puts great pressure on the North Sea. Approximately 65 million people live within the catchment areas that drain into the North Sea and a number of large towns and industries have, over a long period, emptied their waste into the North Sea. Offshore oil and gas production has been a major economic activity in the North Sea since the late 1960s, and the North Sea contains some of the busiest shipping routes in the world. The coastal zone is also used intensively for recreation, such as bathing, sailing and fishing.

As a result, the North Sea has been subject to eutrophication, oil pollution, pollution by hazardous substances and chemicals, and radioactive substances, posing threats to the various species and their habitats.

North Sea Conferences

In the early 1980s there was growing concern in the North Sea countries that the large inputs of various harmful substances via rivers, direct discharges and dumping could cause irreversible damage to the North Sea ecosystems.

Some countries were also dissatisfied with the lack of progress made by the competent international organizations charged with protecting the marine environment. In part this was due to the wider geographical coverage of the bodies concerned and the lack of focus at North Sea level.

This was part of the background for the first International Conference on the Protection of the North Sea in Bremen in 1984 and the subsequent conferences. The ministers have secured good progress through their commitments to meet ambitious targets and specific deadlines, to embark on joint actions and to ensure comprehensive reporting of implementation.

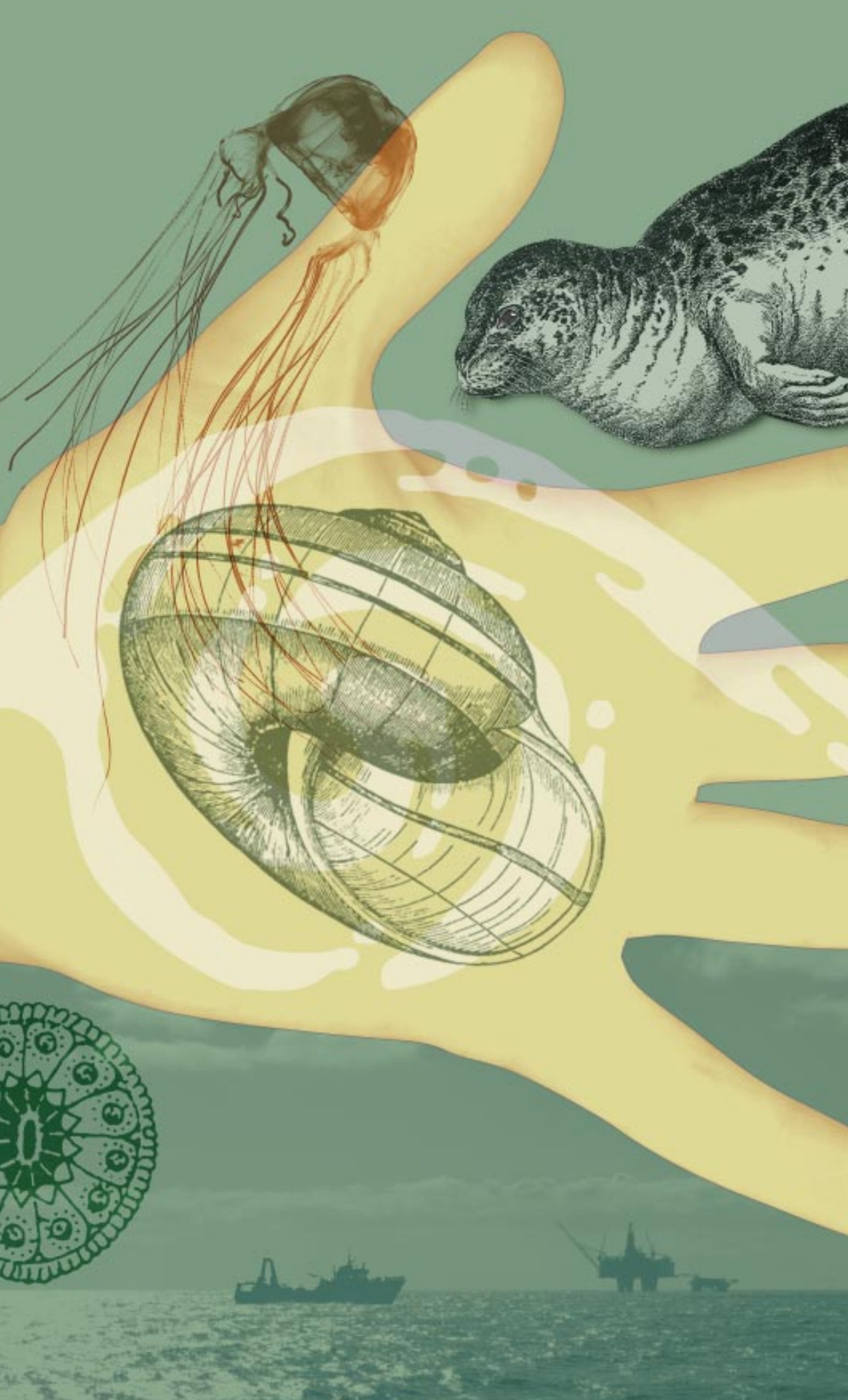
Protection of the North Sea Environment

The North Sea Conferences have focused on the following issues:

- Protection of species and habitats
- Fisheries
- Hazardous substances
- Nutrients inputs and eutrophication
- Pollution from ships
- Pollution from offshore installations
- Radioactive substances
- Dumping of waste at sea
- Incineration of industrial waste at sea

General circulation in the North Sea

Schematic diagram of general circulation in the North Sea. The width of the arrows is indicative of the magnitude of volume transport. Most of the North Sea water flows through the Skagerrak before leaving via the Norwegian Coastal Current. (Source: North Sea Quality Status Report 1993.)



Integration of Fisheries and Environmental Issues

Until 1995, pollution was the main issue at the North Sea conferences. Over the last decade, however, there has been an increasing awareness that other impacts of human activities on the North Sea ecosystems are also very important and that the combined effect could be detrimental to biological diversity and biological production capacity.

This led to increasing concern about the development and status of the North Sea fish stocks, as well as the impact of fisheries on the ecosystems.

On this basis Norway organized the Intermediate Ministerial Meeting on the Integration of Fisheries and Environmental Issues in 1997 (IMM 97), in which ministers responsible for environmental protection and ministers responsible for fisheries as well as the respective EU Commissioners participated.

In the preparations for the IMM 97, it was regarded as important to establish close cooperation between the fisheries and the environmental sectors and include all relevant stakeholders in a constructive dialogue. In order to provide a good basis for discussion, a thorough documentation of the status of the living resources and the habitats in the North Sea was needed. The Assessment Report on Fisheries and Fisheries related Species and Habitats Issues was duly completed as the result of a joint effort by scientists, managers and NGOs. This transparent and participatory approach contributed to mutual trust and improved understanding of the issues. The report was accepted by all stakeholders as a basis for the following negotiations on actions needed for the protection of North Sea fish stocks, other species and their habitats.

Status of North Sea Fisheries and Ecological Impacts

Fishing has a major impact on North Sea ecosystems. Many of the demersal fish stocks have been at a rather low level for several years. The present exploitation rate is high and cannot be regarded as sustainable. In order to improve the stock situation and thus provide for recovery, the EU and Norway have agreed to elaborate harvest strategies for these stocks. This will also be done for mackerel, for which the EU and Norway have agreed to improve the present management system. The North Sea component of mackerel has been very low for many years. The present mackerel fishery in the North Sea is, however, taking place on fish migrating from spawning areas west of Ireland and from the Bay of Biscay into this area in the second half of the year. The North Sea herring stock was for a number of years at a low level, but harvest control rules have been implemented and the stock is presently improving.

Due to high fishing pressure, the size composition of in particular demersal fish has changed, with an increase in the numbers of small fish since the turn of the century. This fact combined with low stock levels are the basis for the work mentioned above which is undertaken by the EU and Norway.

Some demersal fishing gear cause physical disturbance to the sea bottom and therefore have an adverse impact on benthic habitats and communities. This problem has to be further investigated and evaluated. In some of the major fisheries in the North Sea, fish are discarded because they are too small or not the targeted species. In addition, non commercial species of fish, shellfish and benthic species are taken as by-catch in the fisheries, as is the case for marine mammals and seabirds. Current knowledge about the levels of such catches and thereby the impact of this outtake on the ecosystems is limited.

An improved Management Regime for the North Sea

At the IMM 97, the ministers stressed the importance of further integration of fisheries and environmental policies, drawing upon the development and application of an ecosystem approach. They further agreed on guiding principles, management objectives, strategies and actions for the future integration of fisheries management and environmental protection, conservation and management measures.

Main Elements in the future North Sea Management Regime

Guiding Principles

- Utilization of the ecosystem in a manner consistent with sustainable development
- Conservation of biological diversity and the sustainable use of its components
- Application of the precautionary approach
- Further integration of fisheries management and environmental protection, conservation and management measures drawing upon the development and application of an ecosystem approach
- Integration of environmental objectives into fisheries policy

Management Objectives

- To ensure sustainable, sound and healthy ecosystems
- To maintain biological diversity
- To achieve sustainable exploitation of the living marine resources
- To ensure economically viable fisheries

Strategies

- Take appropriate measures to minimize adverse impact of fishing activities
- Take appropriate measures to minimize adverse impacts resulting from human activities other than fishing

Main Areas for Actions

- Rebuilding or maintenance of the spawning stock biomass
- Protection of juvenile fish, crustaceans and molluscs
- Protection of species and habitats
- Protection from activities other than fisheries
- Control and enforcement
- Research on science, technology and economic impact
- Enhanced information and involvement
- Further integration of fisheries and environmental policies
- Implementation and review of progress

(The complete statement may be found in the Statement of Conclusions from the IMM 97.)

An Ecosystem Approach

One important outcome of the IMM 97 is the agreement on the development and application of an ecosystem approach in the management and protection of the North Sea. The development of an ecosystem approach focuses on the critical ecological processes, the ecosystem interactions and the chemical, physical and biological environment. The ecosystem approach has been further elaborated in a workshop in 1998 and will include:

- Management of human activities in an integrated manner
- Formulation of clear objectives, both general and operational
- Better use of existing scientific knowledge
- Focused research on the North Sea ecosystems, including climatic, biological and human driving forces of ecosystem variability
- Improved, integrated monitoring
- Integrated assessments prepared by experts on North Sea fish stocks, the environment and socio-economics
- Involvement of stakeholders, scientists, managers and politicians at different stages of the decision-making process.

Ecological Quality Objectives

One of the main activities in the further development of an ecosystem approach is the establishment of overall or integrated objectives, and at the specific level, more detailed and operational objectives. A framework for operative ecological quality objectives (EcoQOs) has been established. An important principle for the work on EcoQOs is that it includes both the fisheries and environmental sectors on a governmental level as well as stakeholders from both the fishing industry and non-governmental organizations.

Work is currently going on with the objective of developing proposals for Ecological Quality Objectives for the North Sea.

Role and Influence of the North Sea Conferences

While the pertinent Conventions (OSPAR Convention, Marpol 73/78, London Dumping Convention, Bonn Convention) and their executive bodies are rather specialized in their scope, the International Conferences on the Protection of the North Sea have the advantage of providing a political framework for a broad and comprehensive assessment of the measures needed to protect the North Sea.

This enables ministers to deal with a broad range of North Sea issues, and allows them to respond swiftly and to focus on key issues at each conference.

An important feature of the North Sea Conferences is that they constitute political fora which adopt far-reaching politically-based commitments, as opposed to the legally binding force of the decisions taken within the conventions. As a next step these political commitments have been adopted in the framework of legally binding conventions.

Apart from the agreements on action to protect the North Sea, the North Sea Conferences have also played an important role in influencing environmental management decisions in a much wider context.

The adoption of the precautionary principle at the London Conference in 1987 is one of the important decisions emanating from the North Sea Conferences. Once agreed at a political level, the principle has been adopted within the appropriate legislative fora and has become a generally accepted principle for the protection of the environment.

The political forum provided by the North Sea Conferences has afforded a useful opportunity to keep North Sea policy up to date with trends in modern environmental concepts. For example, the Hague Declaration in 1990 accepted the implications of the concepts of sustained use and sustainable development, and the integrated ecosystem approach, as indicated by the World Commission on Environment and Development.

Participants in the North Sea cooperation

The following parties take part in the cooperation:
Belgium, Denmark, France, Germany, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and the European Commission.

In addition, several neighbouring countries, 7 intergovernmental organizations and 22 non-governmental organizations take an active part in the preparations and in negotiations during the ministerial conferences and follow the progress of the implementation of commitments.

International North Sea Conferences

The ministers and the EU Commissioner responsible for the environment in the North Sea have met frequently to discuss and agree on new targets and on joint actions:

- Bremen, Germany, 1984
- London, United Kingdom, 1987
- The Hague, the Netherlands, 1990
- Esbjerg, Denmark, 1995
- Norway, 2002

On two occasions they have had meetings with the Ministers responsible for agriculture and fisheries respectively:

- Copenhagen, Denmark, 1993 (Intermediate Ministerial Meeting on Agriculture and Environment)
- Bergen, Norway, 1997 (Intermediate Ministerial Meeting on the Integration of Fisheries and Environmental Issues)

Some Examples of Goals and Achievements

In addition to the outcome of the Bergen Meeting in 1997 which is described above, some of the main achievements from the North Sea Conferences are outlined below.

Significant Reduction of Nutrients

The increase in inputs of nutrients to the North Sea led to enhanced production and biomass of phytoplankton and changes in species composition, including an increased occurrence of harmful algae. In the bottom waters of certain areas it also resulted in reduced oxygen concentrations, causing mass mortality of benthic organisms and fish.

On this basis the ministers agreed in 1987 on a commitment to aim to achieve a substantial reduction (in the order of 50%) of nutrients into areas where these inputs are likely, directly or indirectly, to cause pollution. The ambitious target set for phosphorus has almost been met, while the reduction target for nitrogen has been more difficult to fulfil because of the particular difficulties of achieving reductions in nutrients from agricultural production.

Reduction and Phasing out of Hazardous Substances

Several synthetic organic chemicals have been detected in estuaries and in the open North Sea, both in sediments and organisms.

In 1990 it was agreed to set ambitious targets to reduce inputs of 36 hazardous substances by 50% and for substances that cause a major threat to reduce inputs by 70%. Significant progress has been made towards achieving the 50% and the 70% reduction targets. Good progress has also been made to reduce the input of certain pesticides reaching the North Sea. Several pesticides have been phased out.

The long-term target from the North Sea Conference in Esbjerg in 1995 of continuously reducing discharges, emissions and losses of hazardous substances, thereby moving towards the target of their cessation within one generation, has now been adopted by the OSPAR Convention and is thus legally binding.

Regional follow up of Global Conventions and Agreements

Many of the general principles and agreements that form the basis for the management of fisheries and the environment are laid down in global and regional conventions and agreements, as well as other international instruments and guidelines.

An important role of the cooperation between the North Sea states has been to provide the appropriate regional framework for the follow up, on a regional level, of conventions and agreements such as Chapter 17 of Agenda 21 and the Convention on Biological Diversity.

The occurrence of PCB has received much attention in recent decades and high concentrations have been observed particularly in predators such as mammals and birds. This led to an agreement in 1990 to phase out and destroy in an environmentally safe manner all identifiable PCBs by 1995 or at the latest by the end of 1999.

TBT – a Cause for Concern

Exposure to tributyltin (TBT), derived predominantly from anti-fouling paints on ships, has been shown to produce distinctive changes in various organisms, which in severe cases can result in sterility and destructive effects on the population. Such effects are demonstrated in many areas of the North Sea. A significant increase in the frequency of occurrence of penis homologues in female whelks (Buccinum undatum) has been found along the most common shipping routes.

After an initiative at the Esbjerg Conference, the North Sea states have taken concerted action within the IMO to reduce pollution caused by the application of TBT in anti-fouling paint on ships. An agreement has now been made within the IMO to introduce a global ban on the use of harmful anti-fouling agents by the year 2003.

Offshore Oil and Gas Industry

There have been reports of oil detected in the tissues of fish well away from oil production platforms and this has been identified as stemming from oily drill cuttings. The North Sea ministers agreed in 1990 to eliminate oil pollution caused by oil contaminated cuttings and to minimize or reduce pollution caused by produced water. The targets have been followed up with implementation through legally binding OSPAR decisions.

The North Sea Conference in 1995 initiated a ban on dumping of disused offshore installations within the maritime area. This initiative has been followed up by the adoption of an OSPAR decision in 1998.

Ban on Dumping and Incineration at Sea

Dumping and incineration of waste at sea was common in the North Sea by the beginning of the 1980s, and was an important issue at the first North Sea Conferences. After an agreement to ban such handling of waste, these activities have now ceased in the North Sea.

Further Information

For further information about the North Sea Conferences please visit our internet homepage at:

http://odin.dep.no/nsc/

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Further reading

Statement of Conclusions, Intermediate Ministerial Meeting on the Integration of Fisheries and Environmental Issues 13 – 14 March 1997, Bergen, Norway. Ministry of the Environment, Norway, 1997.

Assessment Report on Fisheries and Fisheries related Species and Habitats Issues. Ministry of the Environment, Norway, 1997.

Esbjerg Declaration. 4th International Conference on the Protection of the North Sea, Esbjerg, Denmark, 8 – 9 June 1995. Ministry of Environment and Energy, Denmark, 1995.

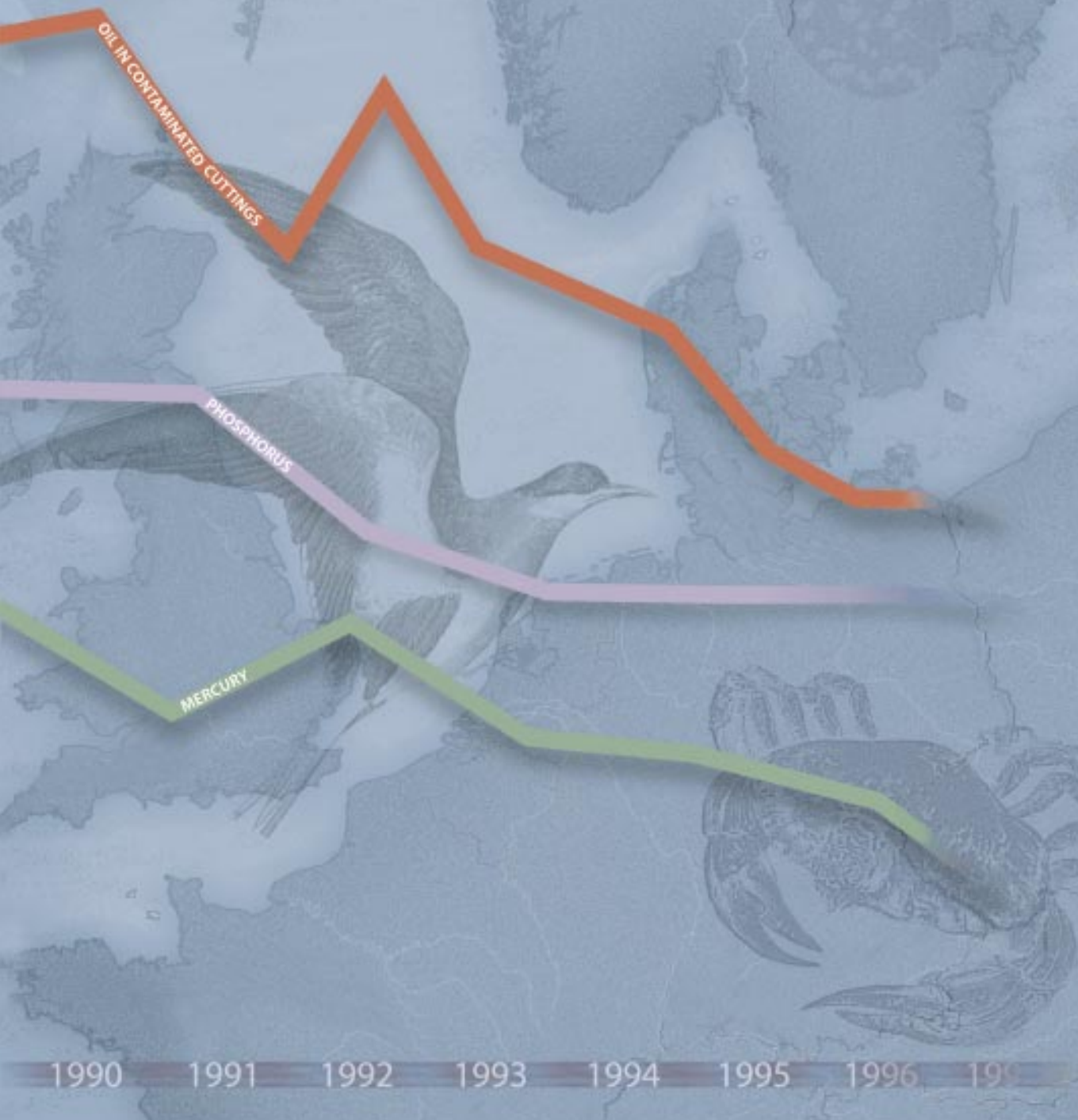
Progress Report. 4th International Conference on the Protection of the North Sea, Esbjerg, Denmark, 8 – 9 June 1995. Ministry of Environment and Energy, Denmark, 1995.

Reduced discharges and inputs

The graphs below give, in an indicative way, some examples of the trends of the reduced inputs of some pollutants to the North Sea in the period from 1990 to 1996:

- inputs of oil in contaminated cuttings from offshore oil and gas production
- direct inputs of phosphorus
- direct and riverine inputs of mercury.

(Source: OSPARCOM)



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