HELSINKI COMMISSION

Baltic Marine Environment Protection Commission

Background information to the Baltic Sea Informal Meeting for Ministers of the Environment

22–23 November 2005, Stockholm, Sweden

HELCOM capturing the future using the experience of the past 30 years

All of us depend on nature and the services it provides us, as a balanced ecosystem is the foundation for a decent, healthy and secure life. Therefore, it is important for us to protect and preserve the marine environment, to ensure that it is safe, clean and productive and can support a wide range of sustainable human economics and social activities.

The Baltic Sea is a shared resource for the nine riparian countries, and the transboundary nature of its marine environment and its declining state, led to the establishment of international cooperation already in the 1970's.

Due to the Baltic Sea's unique characteristics and its recognized environmental problems, the Baltic coastal states acknowledged that informed policy-making would only be effective if it is devised on the basis of reliable knowledge of the state of the marine environment. For this reason HELCOM has from the very beginning of its work provided common ground for understanding the problems of the Baltic Sea by jointly assessing its environmental status.

Recent developments in the Marine protection Policy have led to the conclusion that the former 'substance by substance / sector wise approach, that has been applied during the last 30 years, should be replaced by the ecosystem-based approach.

Our seas have to be recognized as complex entities, demanding a coherent approach, aiming at achieving a balanced relationship between different uses and marine protection aspects. Human activities affecting the marine environment have to be managed in an integrated manner promoting conservation and sustainable use in an equitable way.

HELCOM actions against identified concerns

Through joint assessments on pollution sources and loads, and their effects on the marine environment, HELCOM actions are mainly focussed on four policy areas:

- to reduce nutrient input to the sea, especially from agriculture, in order to combat eutrophication;
- to reduce inputs of hazardous substances into the Baltic Sea;
- to address the environmental risks related to increasing maritime and offshore activities, and
- to halt the decline of biodiversity and degradation of habitats.

These joint HELCOM actions have lead to a significant reduction of nutrient loads from all sources with a rough reduction of ca. 40% of both nitrogen and phosphorus. With the Baltic Sea Joint Comprehensive Environmental Action Programme, 62 of the original 149 hot spots/sub hot spots have been deleted, contributing to significant reductions in discharges of nutrients and hazardous substances from point sources. In addition, a 50% reduction in discharges of 46 hazardous substances prioritised by HELCOM has been largely reached.

The Baltic coastal states have jointly worked within the International Maritime Organization (IMO) to obtain global recognition of the high number of ships in the Baltic Sea and the need for stricter discharge regulations in this area compared to other marine areas. Likewise, the Baltic coastal states have within IMO set measures for the safety of navigation in the Baltic, such as specific routes and recommendations for ships to have pilots on board in areas that are difficult to navigate, especially when carrying cargo posing a potential threat to the marine environment. Co-operation procedures in case of pollution incidents at sea have been jointly developed and are regularly tested during national and international exercises. The Baltic coastal states also carry out regular aerial surveillance flights to detect pollution incidents and to identify polluters.

To protect marine and coastal biotopes around the Baltic Sea - many of which are important habitats for rare or endangered species - HELCOM has designated more than 60 marine protected areas in the Baltic Sea. With an increasing number of human activities in the Baltic Sea, the marine protected areas are also an essential component in spatial planning at sea.

The success of HELCOM's environmental programmes and nature conservation measures can

be seen through the steady increase in populations of top predators, such as the white-tailed eagle, the Baltic's three seal species and the return of the cormorant to the whole region as well as the early signs of the recovery of Baltic salmon populations.

While we are aware that we are hampered by a long time-lag before concrete results of our work can be seen, we also know, and the latest assessments also show, that there still are needs for further actions. For example, there is a need to fight the massive algae blooms and a need for measures to decrease the area of lifeless bottoms in the Baltic.

The HELCOM Baltic Sea Action Plan

There is still the need for a robust scientific framework for assessing the status of the marine environment which can serve as the basis for policy formulations. Instead of setting general reduction targets, this will be achieved by setting ecological objectives for the health status of the Baltic Sea. Sound indicators with realistic and area specific targets will be used in monitoring how the objectives are met for each of our environment priority areas.

This will constitute the essence of the Baltic Sea Action Plan in which HELCOM will agree on actions needed to reach the ecological objectives for each of the four priority areas. To make it a comprehensive action plan, a full commitment from local, national and regional stakeholders is needed.

The Baltic Sea Action Plan will thus also be an important tool for co-ordinating positions within international fora, and thereby ensure that not only national environmental problems but also the specific needs of the Baltic as a whole are taken into account in global and EU policies.

World Bank/Global Environment Facility (GEF) funded Baltic Sea Regional Project (BSRP)

The main scope of future activities in the second phase of the BSRP is to support implementation of the ecosystem approach in the whole Baltic Sea area by a better understanding of the linkages of inputs and effects between land, coastal and open sea areas. The aim is also to provide better assessments within the priority areas of HELCOM to be a basis for future management of human activities affecting the Baltic Sea and thus help to develop and implement the HELCOM Baltic Sea Action Plan.

This document sets out background information on:

1. the health status of the Baltic as seen by HELCOM,
2. HELCOM's work and achievements through 30 years as well as plans for future actions,
3. the HELCOM Baltic Sea Action Plan,
4. a summary of the status of the World Bank/GEF-funded Baltic Sea Regional Project and an outlook on the future of the Project.

Health of the Baltic Sea

Background information to the Baltic Sea Informal Meeting of Ministers of the Environment

22–23 November 2005, Stockholm, Sweden

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Summary

The Baltic Sea is impacted by many human activities and uses of the natural resources. This document focuses on the four main areas of concern defined by HELCOM; eutrophication, hazardous substances, maritime shipping and the loss of biodiversity and habitats.

As the environmental focal point of the Baltic Sea, the Helsinki Commission - HELCOM - has been assessing the sources and inputs of nutrients and hazardous substances and their effects on ecosystems in the Baltic Sea for almost 30 years. The resulting assessment reports are unique compilations of data and analyses based on scientific research carried out around the Baltic Sea, including special monitoring programmes coordinated by HELCOM.

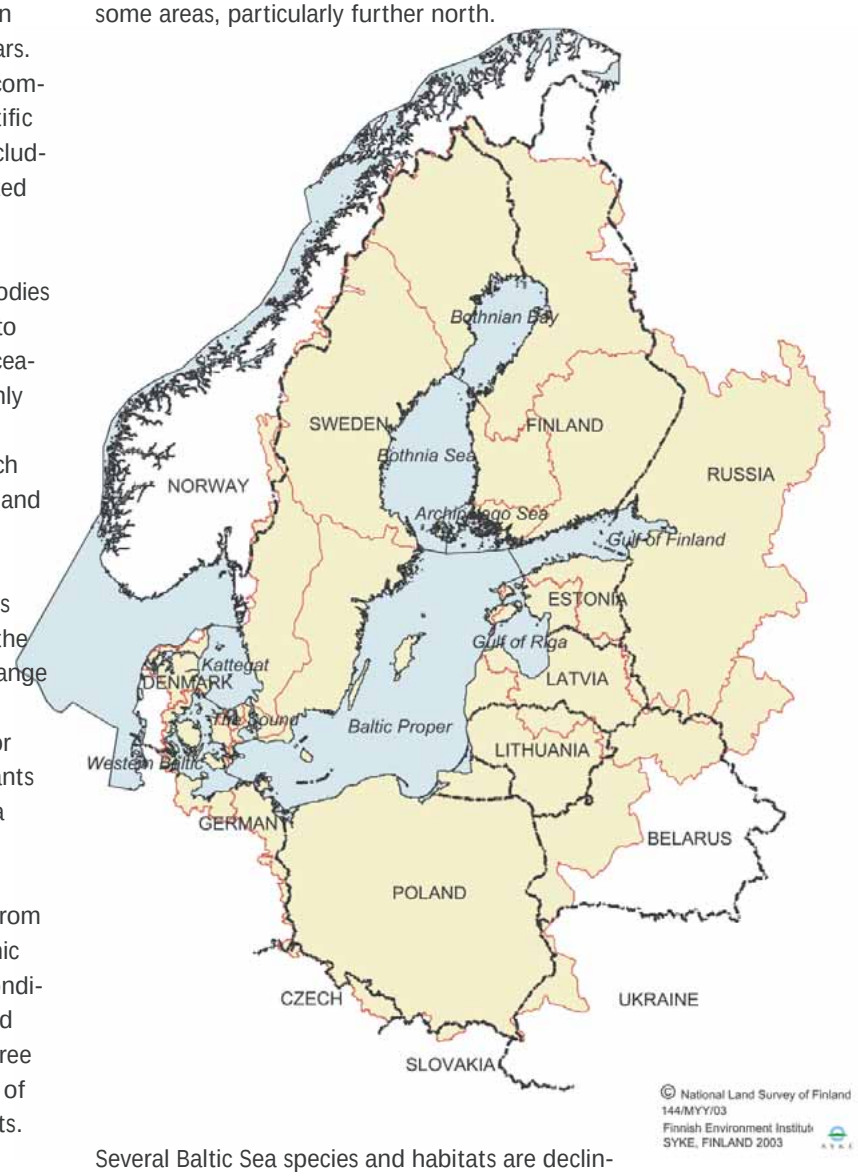
The Baltic Sea, as one of the world's largest bodies of brackish water, is ecologically unique. Due to its special geographical, climatological, and oceanographic characteristics, the Baltic Sea is highly sensitive to the environmental impacts of human activities in its catchment area, which is ca. four times larger than the sea area itself and serves as home to some 85 million people.

The Baltic Sea is only connected to the world's oceans by the narrow and shallow waters of the Sound and the Belt Sea which limits the exchange of water with the North Sea. This means that some of the water may remain in the Baltic for up to 30 years, which also means that pollutants entering the Baltic Sea may remain there for a long time.

Since the 1800s, the Baltic Sea has changed from an oligotrophic clear-water sea into a eutrophic marine environment. Compared to pristine conditions, nitrogen inputs have more than doubled and phosphorus inputs are in average over three times higher. Agriculture contributes majority of the current water- and airborne nutrient inputs.

As a result, eutrophication is an issue of major concern almost everywhere around the Baltic Sea area: the average biomass production has increased by a factor of 2.5, exceptionally intense algal blooms have become more common, oxygen depletion has considerably worsened by eutrophication leading to increased internal loading; biodiversity and fish stocks have been affected as well.

The loads of some hazardous substances to the Baltic Sea have been reduced considerably over the past 20 to 30 years. However, their concentrations in the Baltic Sea are still up to 20 times higher than in the Northern Atlantic. For heavy metals, the best news is the clear decrease in lead concentrations in herring observed in most areas. Concentrations of several organic pollutants in marine ecosystems declined in the 1980s but this decrease levelled off in the 1990s. Dioxin levels in fish still exceed the new EU food safety limits in some areas, particularly further north.



Several Baltic Sea species and habitats are declining or endangered. As much as 90% of the marine and coastal biotopes around the Baltic Sea area are to some degree threatened today, and many of these areas are important habitats for rare or endangered species.

Present commercial fishing practices have environmental impacts throughout the whole Baltic Sea, affecting species caught accidentally as

by-catches, as well as the stocks of commercially fished species themselves.

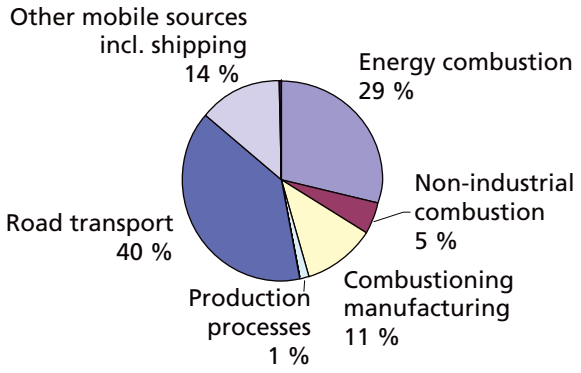
Major impacts of shipping to the marine environment are pollution by ship generated waste, air emissions, introduction of alien species via discharge of ballast water and accidents.

The success of HELCOM's environmental programmes and nature conservation measures is the steady increase of top predators such as the white-tailed eagle and the Baltic's three seal species.

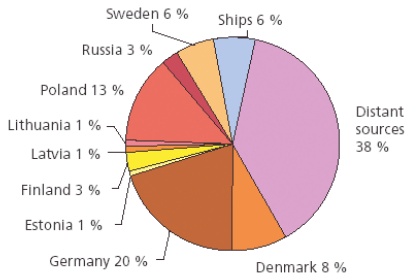
Eutrophication still a widespread and persistent problem

Input of nutrients

The total input of nitrogen to the Baltic Sea is ca. 1 009 700 tonnes, of which 25 % enters as atmospheric deposition on the Baltic Sea and 75 % as waterborne inputs.



Percentage of total emissions of nitrogen oxides (NOx) from different sectors in the HELCOM Contracting Parties (EMEP 2004a).



Proportion of atmospheric deposition of nitrogen on the Baltic Sea by HELCOM contributor in 2000 showing that more than one third is originating from sources outside the HELCOM Contracting States.

The total input of phosphorus to the Baltic Sea is ca. 34 500 tonnes. Phosphorus enters the Baltic Sea mainly as waterborne input, and the contribution of atmospheric deposition is only 1-5 % of the total.

The aforementioned figures include inputs from natural background sources as well as anthropogenic sources.

Airborne nitrogen

The atmospheric deposition on the Baltic Sea originates from emission sources inside and outside the catchment area of the Baltic Sea.

Nitrogen compounds are emitted to the atmosphere as nitrogen oxides and ammonia. Shipping, road transport and energy combustion are the main sources for emissions of nitrogen oxides (see figure below). For ammonia emissions agriculture is the most significant source, accounting for around 90% of all ammonia emissions in the HELCOM countries. In total nitrogen, emissions from agriculture stands for about 40 % of the total emissions.

Waterborne inputs

The waterborne inputs encompass inputs via rivers and point sources discharging directly into the sea. The inputs from rivers also include contributions from parts of the Baltic Sea catchment area which lie outside the HELCOM countries.

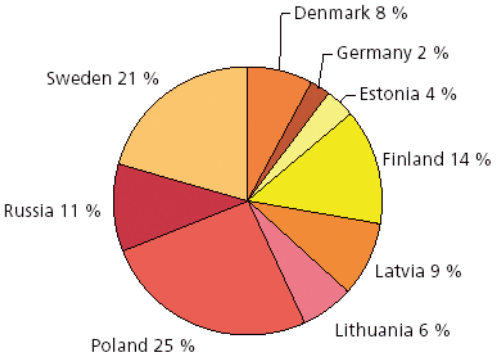
Agriculture and managed forestry contribute almost 60 % and 50 % of the waterborne nitrogen and phosphorus inputs to the sea, respectively. For nitrogen, 28 % enters from natural background sources and 13 % comes from point sources. Point sources and natural background sources each contribute approximately 25 % of the phosphorus input to the Baltic Sea.

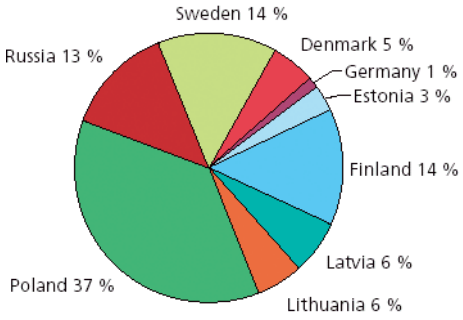
The anthropogenic nutrient loads per capita by country are shown below. These calculated loads include discharges per capita from both diffuse and point sources, but not the natural background loads.

Transboundary pollution load

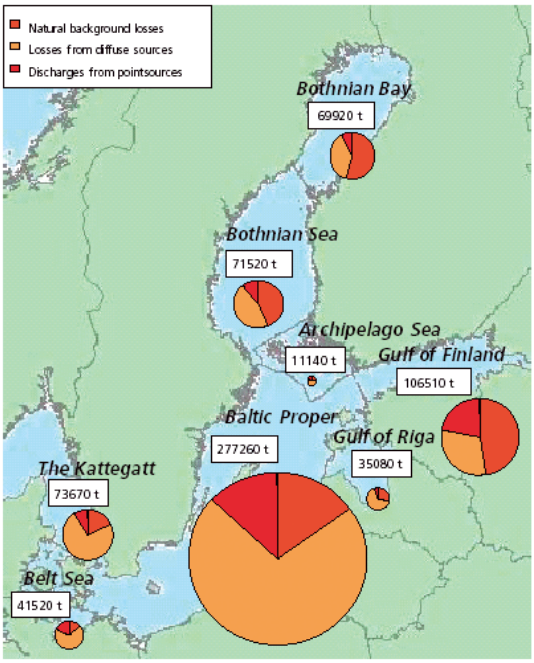
The transboundary pollution loads flowing from Belarus, the Czech Republic and Ukraine into the Baltic Sea are significant.

The total riverine loads of nitrogen and phosphorus originating in these countries, measured at the borders, are about 8 and 7 % respectively when compared with the total loads measured at river

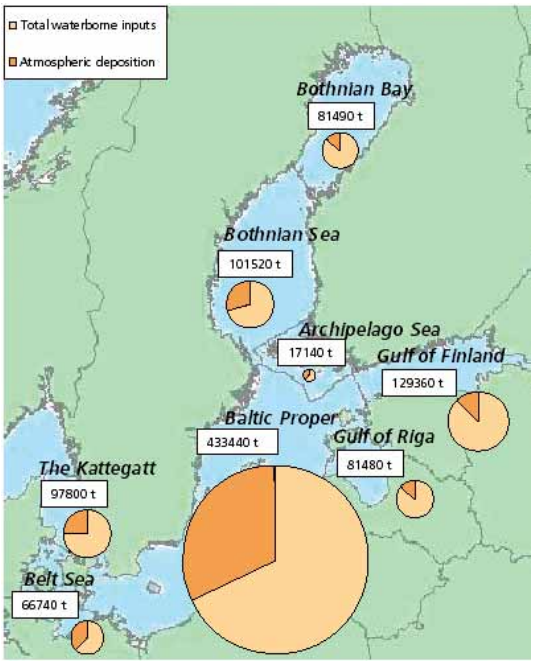




Proportion of waterborne inputs of nitrogen (left) and phosphorus (right) into the Baltic Sea by HELCOM countries in 2000. These inputs include inputs from natural background sources as well as anthropogenic sources.

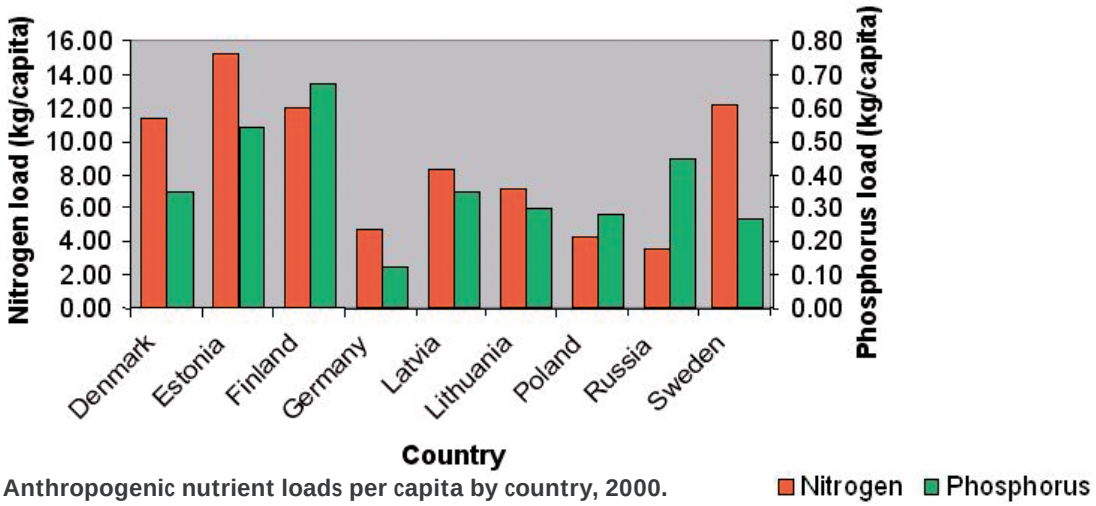


Proportion of sources contributing to waterborne nitrogen input into the Baltic Sea sub-regions in 2000.



Proportion of airborne and waterborne nitrogen inputs into the Baltic Sea sub-regions in 2000.

Anthropogenic nutrient loads per capita by country in 2000



Anthropogenic nutrient loads per capita by country, 2000.

mouths along the Baltic Sea coast. The significance of the transboundary pollution loads in the individual sub-catchments is naturally higher. Compared to the load at the river mouth, the transboundary pollution loads for nitrogen and phosphorus respectively are 31 % and 56 % at Nemunas, 63 % and 60 % at Daugava, 5 % and 5 % at Vistula and 16 % and 14 % at Oder, without taking into account riverine retention.

The countries are also significant sources for airborne nitrogen deposited into the Baltic Sea. The Czech Republic is the 11th largest depositor of nitrogen into the Baltic Sea – more than the contribution from Finland or Russia. Ukraine and Belarus rank 15th and 16th on the list of the most significant contributors, their input exceeding the levels of airborne nitrogen coming from Estonia, Latvia or Lithuania into the Baltic Sea.

Long-term changes in nutrient inputs

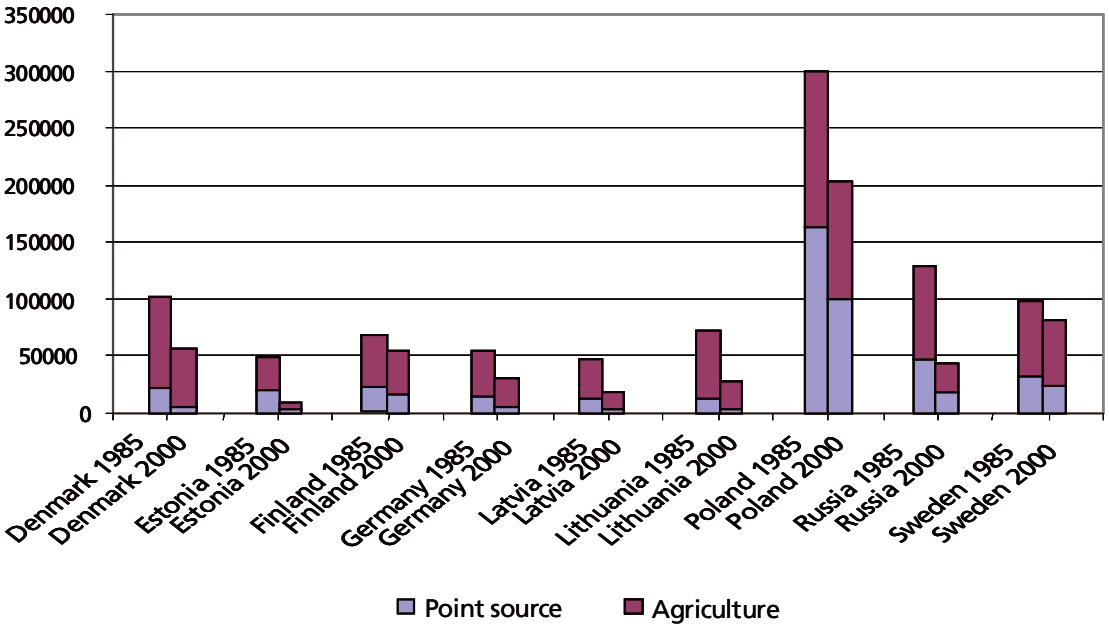
Compared to pristine conditions, nitrogen inputs have more than doubled and phosphorus inputs are in average over three times higher. According to HELCOM assessment, the inputs are slowly decreasing.

Since 1980 there has been a reduction of approximately 40 % in the levels of total nitrogen emissions from the HELCOM Contracting Parties. On the other hand, deposition levels have only declined roughly by 15 % during the same time period. This is due to the fact that the deposition of nitrogen into the Baltic Sea is highly dependent on meteorological conditions, which change from year to year. As a result, reductions in nitrogen emissions do not necessarily lead to corresponding reductions in deposition.

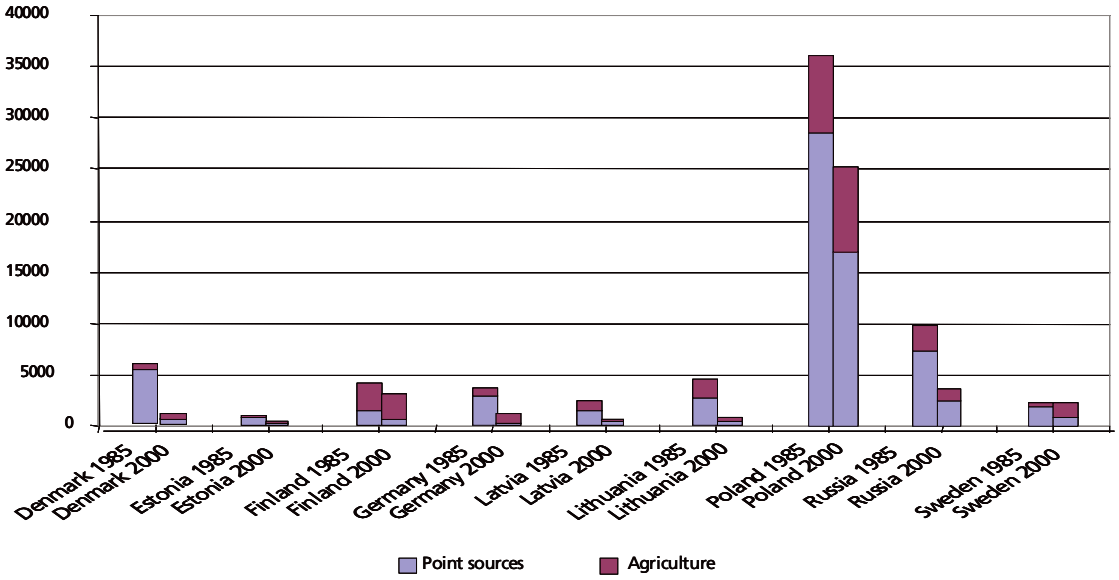
The progress in reducing waterborne nutrient discharges from point sources such as municipal and industrial wastewater treatment plants has been good, with the 50 % reduction target for phosphorus achieved by almost all the HELCOM countries.

Measures to reduce nutrients from agriculture have fallen short of their aims. This is partly, however, also due to the fact that it can take decades to achieve the full effects of these measures. Further, climatic conditions should be taken into account when comparing figures for agriculture from 1985 with 2000.

In total the reduction of discharges for both phosphorus and nitrogen has been roughly 40 % from all sources.



Nitrogen inputs from point sources and agriculture within the Baltic Sea catchment area by HELCOM countries in 1985 and in 2000.



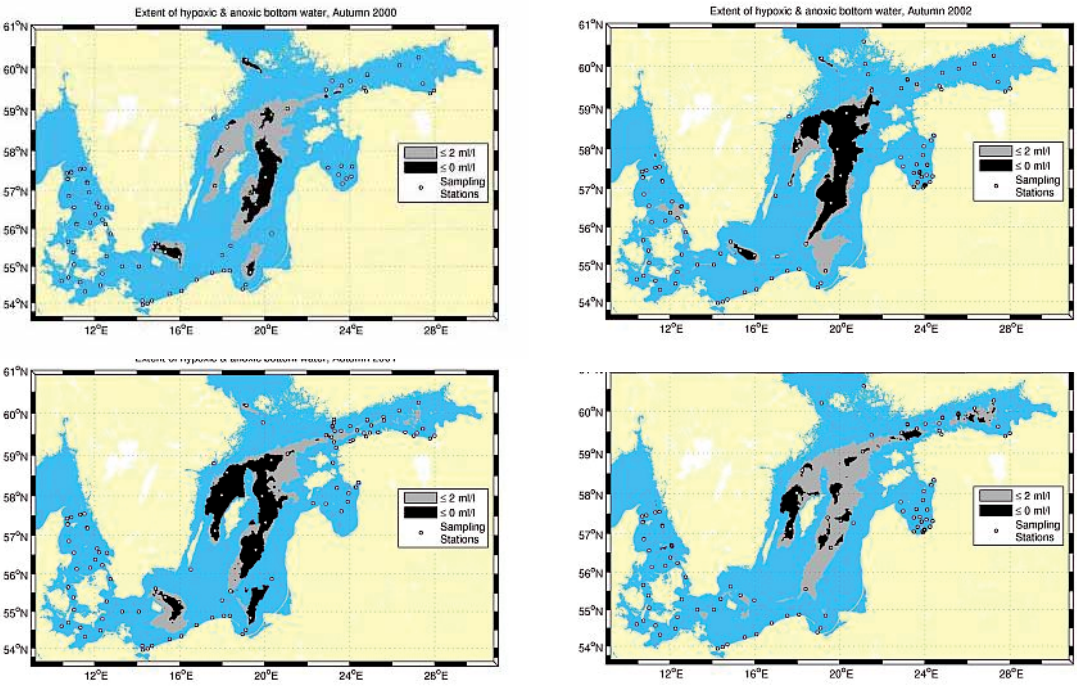
Phosphorus inputs from point sources and agriculture within the Baltic Sea catchment area by HELCOM countries in 1985 and in 2000.

Impacts of nutrient inputs

Since the 1800s, the Baltic Sea has changed from an oligotrophic clear-water sea into a eutrophic marine environment.

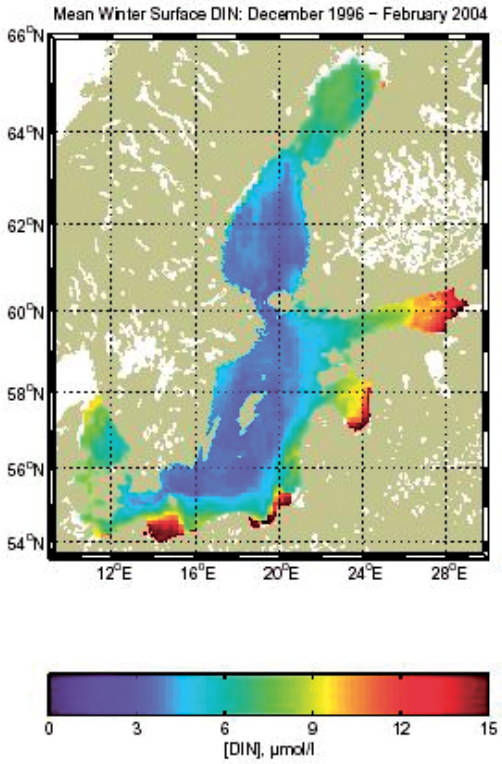
Nitrogen and phosphorus are among the main growth limiting nutrients and as such do not pose any direct hazards to marine organisms. Eutrophication, however, is a condition in an aquatic ecosystem where high nutrient concentrations stimulate growth of algae which leads to imbalanced functioning of the system causing:

- intense algal growth: excess of filamentous algae and phytoplankton blooms;
- production of excess organic matter;
- increase in oxygen consumption;
- oxygen depletion; and
- death of benthic organism, including fish.



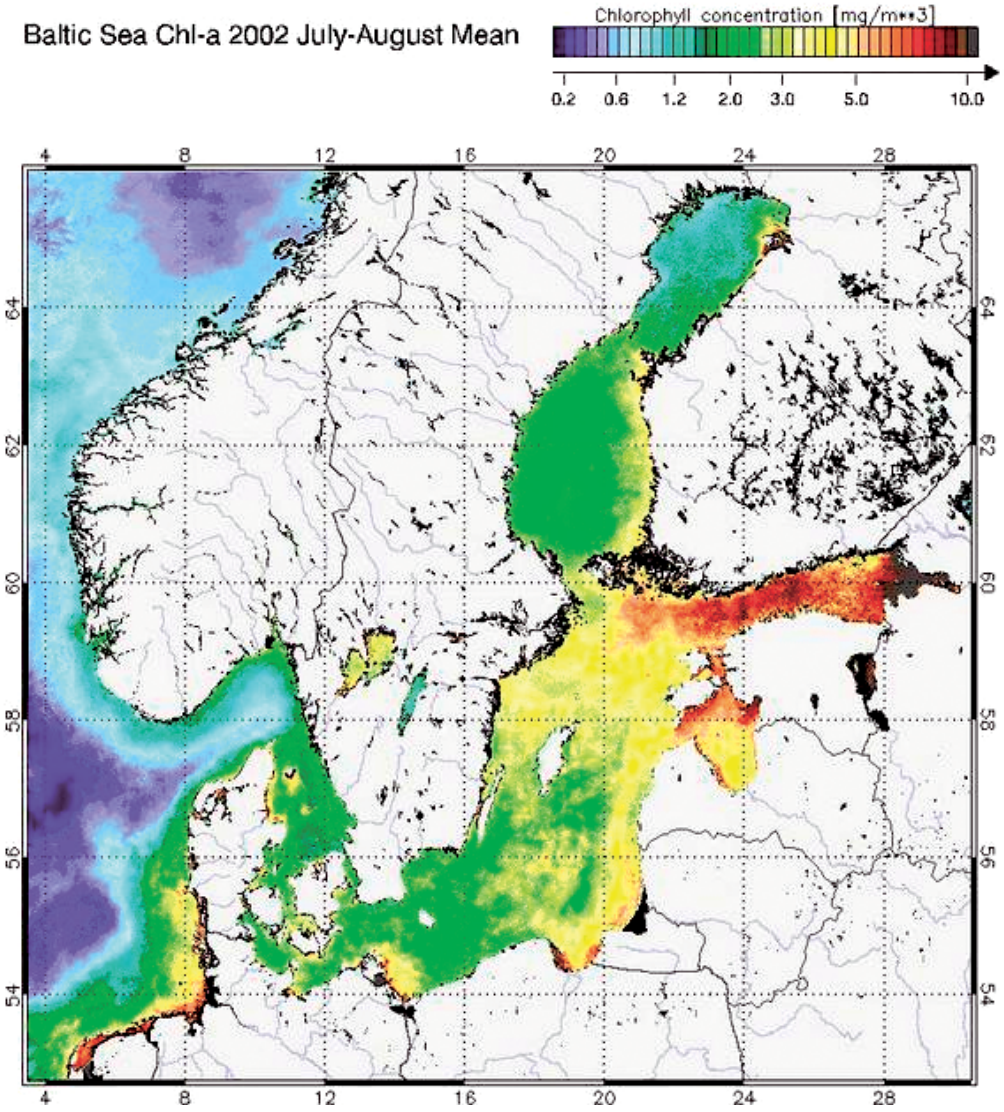
Extent of hypoxic and anoxic bottom water (oxygen content below 2 ml/l and 0 ml respectively) in Autumn 2000 – 2003.

Eutrophication remains an issue of major concern almost everywhere around the Baltic Sea area and observations of the abovementioned concerns are recorded both in coastal waters and the open seas. The figure below shows the regional distribution of the bottom areas where oxygen concentrations are below the critical level of 2 ml/l. The large saltwater inflows during 1993 and 1994 oxygenated the bottom waters in the Baltic Proper. However, due to the lack of any further inflow events and the strong stratification built up by the inflows, the oxygen levels decreased again due to a too large sedimentation of organic material in comparison to the oxygen transported into the deep waters.



Mean winter surface concentration of dissolved inorganic nitrogen in the period 1996 – 2004 showing the high accumulation in areas affected by major rivers.

The above figure shows high winter concentrations of nutrients in coastal waters (indicated by the red color) mainly in areas affected by the main rivers entering the Baltic Sea. Nutrient enrichment of the waters stimulates the growth of phytoplankton, leading, in certain circumstances, to the phenomena of algal blooms and subsequent sedimentation and anoxia in the lower part of the water column with destruction of the benthic fauna and flora. The regional distribution of the phytoplankton growth shown in the figure below reflects the impact as seen during summer of the excess nutrient inflow from the major rivers.



Chlorophyll-a map of the Baltic Sea from satellite remote sensing showing the regional distribution of phytoplankton reflecting the primary impacts of excess nutrients as presented in the preceding figure.

More action still needed on hazardous substances

Inputs of hazardous substances

The loads of some hazardous substances to the Baltic Sea have been reduced considerably over the past 20 to 30 years. In particular discharges of heavy metals have decreased, although no clear general trends have been observed for some heavy metal concentrations in marine biota since 1990.

For mercury (50%), lead (60-70 %) and cadmium (75-85 %) waterborne inputs to the Baltic Sea via rivers or as direct discharges is the main contributor. The remaining share is mainly from atmospheric deposition of these heavy metals.

Airborne input

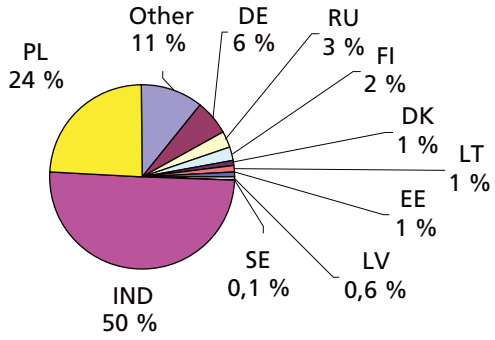
In 2002 total annual emissions by the HELCOM countries amounted to 120 tonnes of cadmium, 65 tonnes of mercury, and 3 320 tonnes of lead.

Depositions of cadmium and lead show a decrease from south to north, due to the distance from the main emission sources. The total annual atmospheric depositions of heavy metals into the Baltic Sea is over 7 tonnes of cadmium, 3 tonnes of mercury, and ca. 149 tonnes of lead. The highest levels of heavy metal deposition are experienced in the Belt Sea sub-basin.

Anthropogenic emission sources, such as industries, energy production and waste incineration, of heavy metals in the HELCOM countries accounted

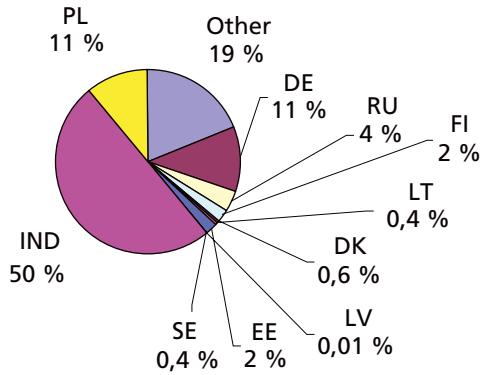
for about 40-50% of the total atmospheric deposition into the Baltic Sea in 2002. Natural and distant sources from outside the Baltic Sea catchment area also contributed significantly. By individual countries, the most significant depositions of lead and cadmium originated from sources in Poland, Germany, and Russia. For mercury, the largest contributions came from Germany, Poland, and Denmark (see figures below).

Cadmium



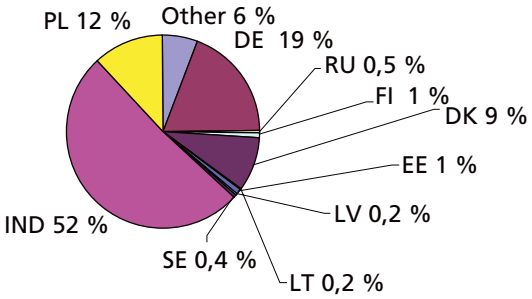
Comparison of main emissions sources of cadmium contributing to its annual deposition over the entire Baltic Sea Basin in 2000. Other – means other European countries in total; IND – means indeterminate sources: natural, previous and remote anthropogenic sources.

Lead



Comparison of main emissions sources of lead contributing to its annual deposition over the entire Baltic Sea Basin in 2000. Other – means other European countries in total; IND – means indeterminate sources: natural, previous and remote anthropogenic sources.

Mercury



Comparison of main emissions sources of mercury contributing to its annual deposition over the entire Baltic Sea Basin in 2000. Other – means other European countries in total; IND – means indeterminate sources: natural, previous and remote anthropogenic sources.

Waterborne input

The reported riverine loads including direct discharges from coastal areas to the Baltic Sea amounted to 7.3 tonnes of mercury, 285.8 tonnes of lead and 8.1 tonnes of cadmium. The riverine inputs of heavy metals, are for cadmium, lead and copper highest in the Gulf of Finland, while mercury inputs are highest in the Baltic Proper. A few large rivers account for very large proportions of the total riverine heavy metal loads.

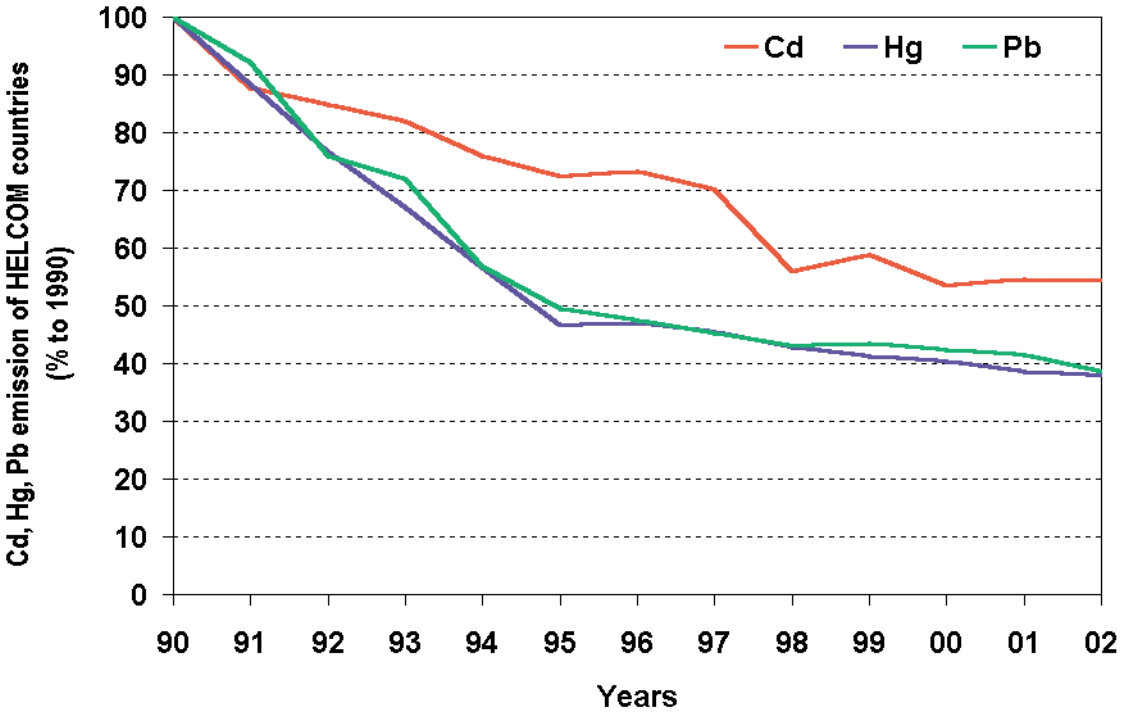
Transboundary pollution

Transboundary pollution loads from Belarus, the Czech Republic and Ukraine are significant also for heavy metals. The proportions of the total pollution loads entering the Baltic Sea that originate from these upstream countries are in the range of 5% to 15% for selected heavy metals such as mercury, cadmium and lead. The significance of this transboundary pollution is naturally higher in certain subcatchments than in the Baltic Sea overall.

Long-term trends in inputs of hazardous substances

Emissions of heavy metals from the HELCOM countries decreased during the period 1990–2002 by 46% for cadmium, 62% for mercury, and 61% for lead.

The reduction in heavy metal emission to the atmosphere is a consequence of increased use of lead-free fuels, use of cleaner production technologies as well as of economic decline and industrial restructuring in Poland, Estonia, Latvia, Lithuania, and Russia in early 1990s.



Total annual emissions of cadmium (Cd), mercury (Hg), and lead (Pb) to air from HELCOM countries in period 1990-2002 (% of 1990).

Annual deposition rates of these heavy metals have halved since 1990 in the Baltic Sea as a whole. Deposition rates for mercury have not decreased since the mid 1990s, however. During the 1990s the use of lindane in HELCOM countries was practically ceased, and atmospheric depositions of lindane in the Baltic Sea region have decreased significantly. Due to the variability of meteorological conditions the decrease in emissions does not always lead to corresponding reduction in deposition rates on the Baltic Sea.

Since the mid 1990s riverine heavy metal loads (notably cadmium and lead) have decreased in several countries. According to investigations it can also be assumed that the 50 % reduction target has been largely achieved for 46 hazardous substances prioritised by HELCOM.

Impacts of hazardous substances

Despite reductions in inputs, concentrations of heavy metals and organic pollutants in the Baltic Sea are still up to 20 times higher than in the Northern Atlantic (see figure below).

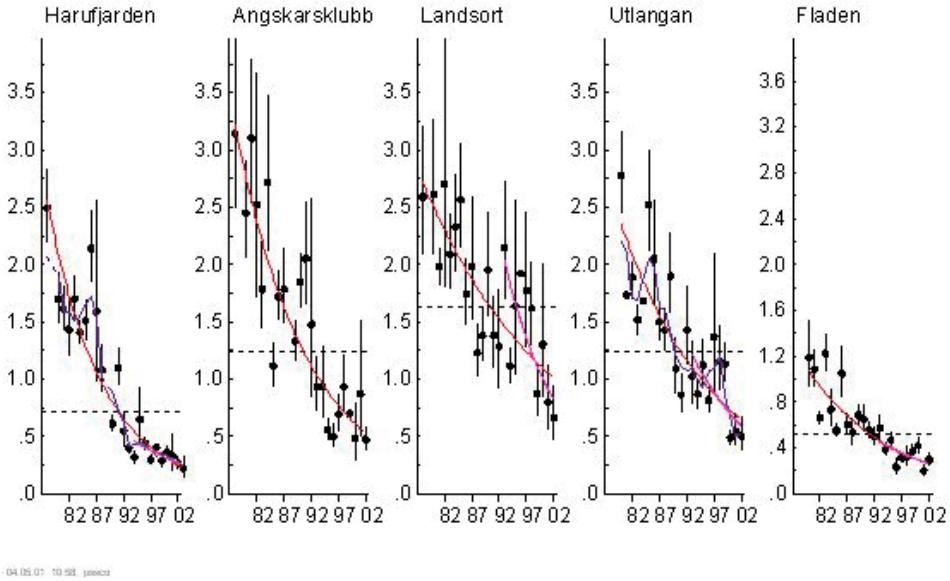
Heavy metal	North Atlantic	Baltic Sea
Mercury	0.15-0.3	5-6
Cadmium	2-6	12-16
Lead	5-9	12-20
Zink	10-75	600-1000
Copper	65-85	500-700

Concentrations of dissolved trace metals in the North Atlantic and the Baltic Sea (ng/kg).

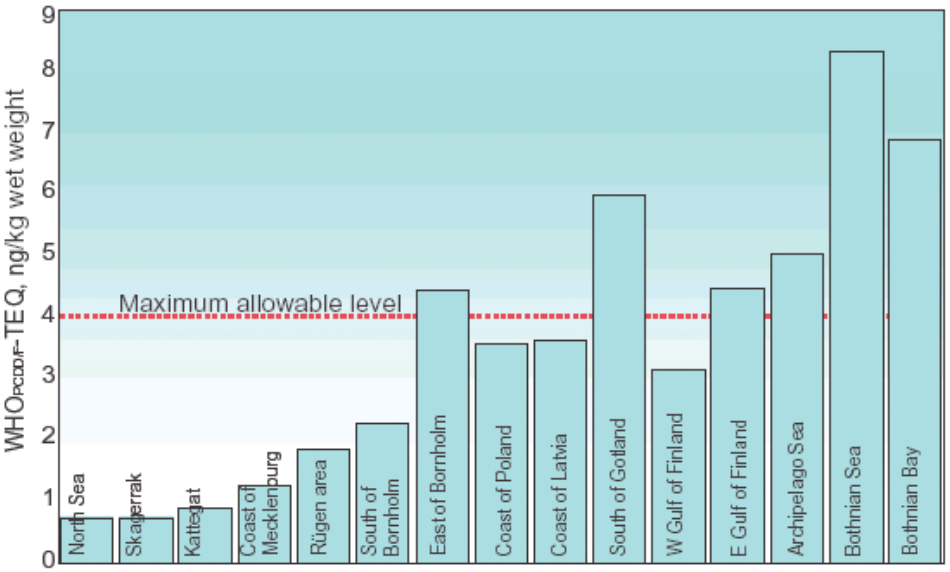
In the marine environment, concentrations of some metals, such as cadmium, are declining in organisms in some areas (e.g. the Gulf of Bothnia and the Gulf of Finland) but increasing in others (e.g. the western Baltic Proper).

The best news is the clear decrease in lead concentrations in herring observed in most areas.

Concentrations of HCH-isomers (lindane) in water and biota have decreased considerably since the early 1980s.



Temporal trends of PCBs concentration (µg/g lipid) in herring muscle since 1980's.



The Dioxin content in herring muscle at different fishing grounds.

Concentrations of dioxin and PCBs in marine ecosystems declined in the 1980s but this decrease levelled off in the 1990s. Dioxin levels in fish still exceed the new EU food safety limits in some areas, particularly further north.

TBT concentration levels are still so high that they have potential biological effects, at least in the Kattegat, the Belt Sea and the Sound. For other endocrine disrupting substances and new contaminants, like flame retardants, a full assessment of their levels or effects is not possible due to the lack of monitoring data.

The chemical weapons dumped in the deep waters of the Baltic Sea in the 1940s are not currently seen as a serious threat to marine ecosystems. Research also indicates that any attempt to recover these munitions would be more likely to cause harm than good.

Habitats and biodiversity at risk

Natural sensitivity and human threats

The biodiversity in the Baltic Sea is affected due both to the unique brackish water and to human activities, such as pollution (nutrients and hazardous substances), coastal development, fisheries and transfer of alien species. As the figure below shows, the biodiversity is very much influenced by salinity and, thereby, species distributions vary greatly by sub-region. It is the variation in salinity levels which makes the Baltic Sea such a harsh environment for many species, therefore, making them particularly susceptible to external pressures.

Effects

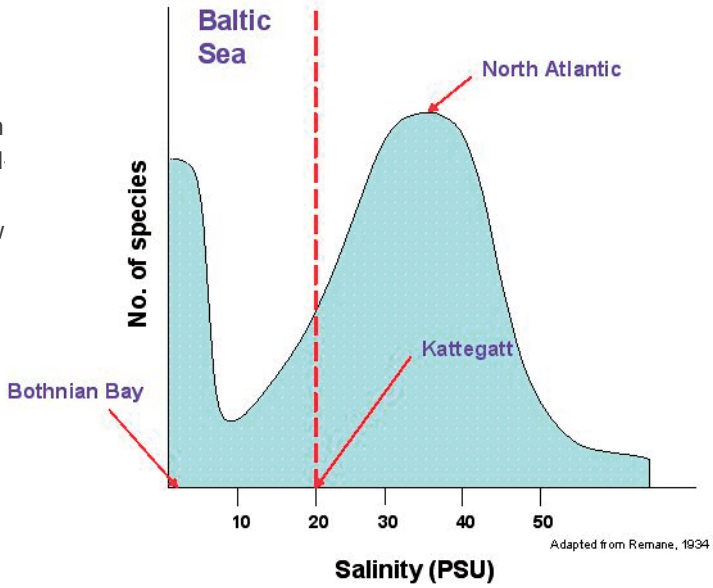
Nearly all the Baltic's top predators, such as marine mammals and several bird species, still suffer from pollution, fisheries' by-catch and habitat destruction. The Baltic harbour porpoises are still endangered and all the Baltic's seal species are still to some degree threatened.

About 100 non-native species have been recorded in the Baltic Sea, and almost 70 of them have been able to establish viably reproducing populations.

Some of the commercially important fish stocks in the Baltic Sea are currently exploited in excess of "safe biological limits". This over-fishing can put entire marine ecosystems under pressure by changing their species composition and predator-prey ratios. Over-fishing of Baltic cod is currently a serious problem. Spawning stocks of herring have also decreased steadily since the 1970s, mainly due to changing environmental conditions.

Reproduction failures have been observed among the coastal fish stocks since the mid 1990s. While the reason for these problems is not fully understood, increasing eutrophication is widely implicated. The spawning areas of several coastal fish species are situated in the inner archipelago and coastal bays, where their reproduction may be affected by the pronounced effects of eutrophication, changes in the sea-bed and oxygen depletion.

The species make-up of fish communities in coastal waters has also changed due to eutrophication.



The influence of salinity on the diversity of species.

As much as 90% of the marine and coastal biotopes around the Baltic Sea area are to some degree threatened today, and many of these areas are important habitats for rare or endangered species.

Trends

While the aim of the work of HELCOM is broad, namely the restoration of the health status and the preservation of the ecological balance of the Baltic Sea, the number and size of the populations of top predators and the status of biotopes can be seen as indicators of the health status of the Baltic Sea.

One sign of the success of HELCOM's environmental programmes and nature conservation measures is the steady increase over recent decades in the breeding success rates of top predators, such as the white-tailed eagle and the Baltic's three seal species. But seals still face health problems, with sterility levels high among young ringed seals, other pollution-related disorders evidently increasing in grey seals, and harbour seal population again suffering from the Seal Distemper Epidemic in 2002. Another positive sign is an increase in the productivity of wild salmon of one million young fish a year over the period 1995–2001.

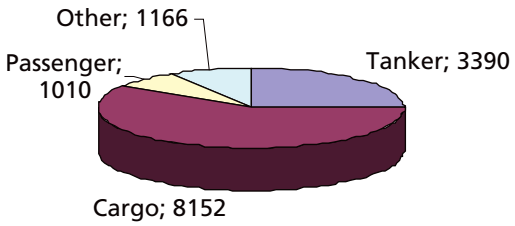
Increasingly crowded shipping lanes

Impacts of shipping

The Baltic Sea is considered to have one of the world's most dense shipping traffic. Moreover, the transportation of oil and other dangerous goods is growing significantly every year. According to the HELCOM ship traffic monitoring system (see figure below) which was launched in July 2005 almost 14 000 ships entered or left the Baltic through the Danish straits, during a three month period, approximately 25 % of which were tankers.

Major impacts of shipping to the marine environment are pollution by ship generated waste or from accidents, air emissions and introduction of alien species via discharge of ballast water.

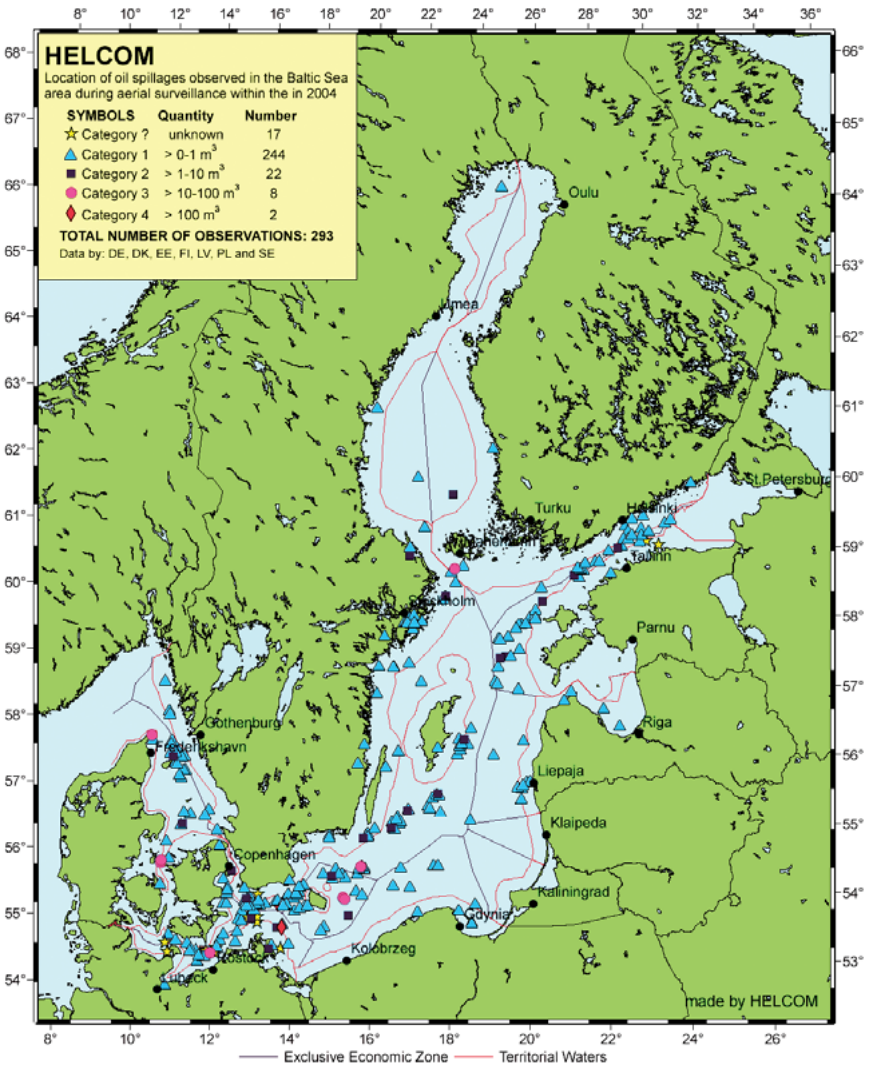
Number of ships passing the Skaw July-October 2005



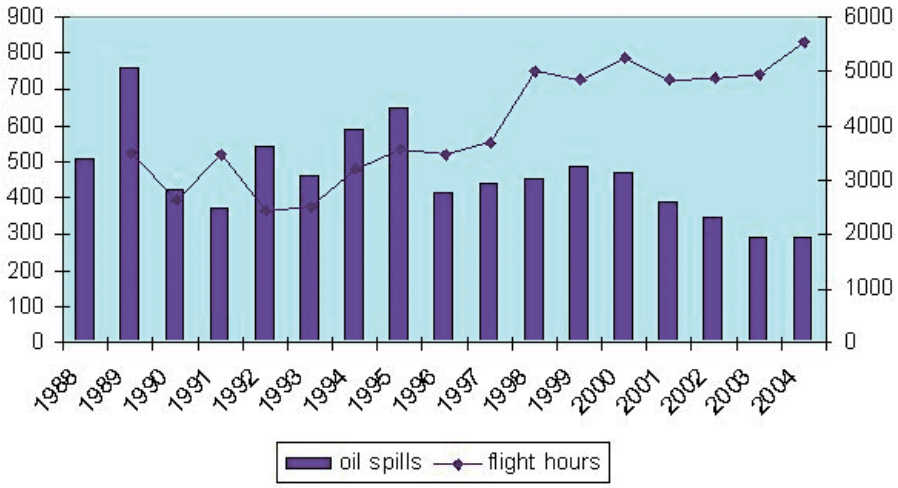
Number of ships passing the Skaw in July-October 2005.

Illegal discharges

Deliberate illegal oil discharges from ships have been regularly observed within the Baltic Sea since 1988. On an annual basis around 300-400 illegal discharges are detected. The average number of observed illegal oil discharges has gradually decreased every year seen in the light of increased traffic and increased surveillance. Although the number of observations of illegal oil discharges has been decreasing over the last 5 years it should be kept in mind that for some areas aerial surveillance is not evenly and regularly carried out and, therefore, there are no reliable figures for these areas.

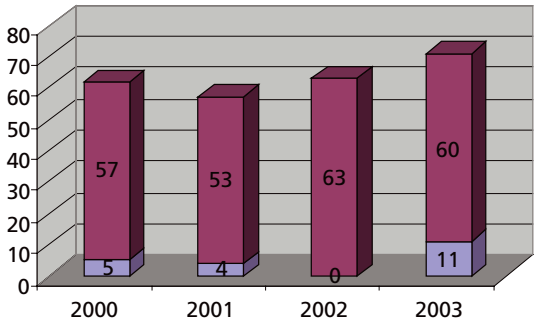


Location of oil spills observed in the Baltic Sea area during aerial surveillance in 2004.

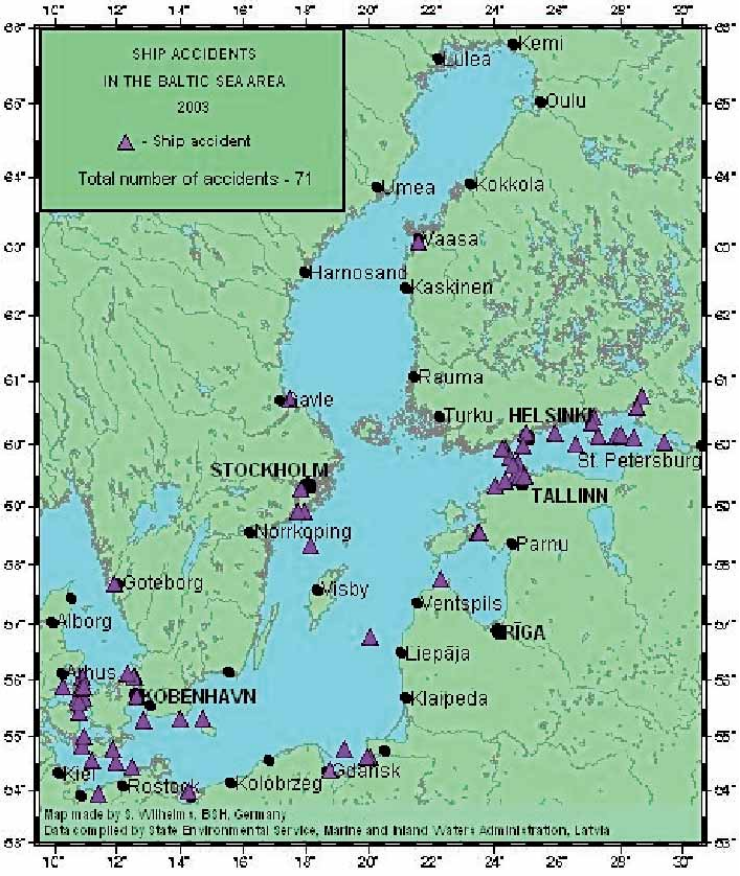


Temporal changes in number of oil spills observed (left-hand scale) by the HELCOM co-ordinated aerial surveillance since 1988. The flight hours are indicated in the right-hand scale.

Ship accidents in the Baltic 2000-2003



Number of accidents in the Baltic Sea.



Location of accidents in the Baltic Sea area in 2003.

Accidents

Every year 60-100 ship accidents are reported to HELCOM and in average 8 % of them result in some kind of pollution. It can also be noted that two out of the five largest accidents in the Baltic took place since 2001 (”Baltic Carrier” in 2001; 2 700 t and ”Fu Shan Hai” in 2003;1 200 t).

Air pollution from shipping

Increasing maritime transport also means increases in air pollution, including NOx emissions. According to recent estimates emissions of nitrogen oxides from international shipping traffic on the European seas increased by more than 28 % between 1990 and 2000. The emissions of NOx from international shipping are expected to increase by two-thirds by the year 2020, even after implementation of the current MARPOL requirements concerning air pollution by ships. According to this estimate, by 2020 emissions from international shipping throughout Europe will surpass emissions from all land-based sources in the 25 EU member states combined.

Alien species

In addition to the fact that the Baltic Sea is considered to be particularly sensitive to bio-invasions due to low biodiversity the risks are further increased by large amounts of ballast water transported by rapidly growing shipping activities from all oceans as well as channels connecting the Baltic Sea to the Caspian and Black Sea basins.

Impacts

Oil spills contaminate the water by creating an oily layer on the surface or by mixing and dissolving in the water. The most visible effects of oil spills are caused by the oil on the surface: seals and birds are smothered and their chances of survival are hampered by problems with their mobility or the insulating properties of their feathers or skin. Oil pollution also destroys habitats for many plants and animals, including the spawning areas of fish. Moreover, many of the chemicals in oil spills are toxic, and can have serious effects on plankton, fish and animals living on the sea floor. Oil decomposes slowly in the cold waters of the Baltic. Coastal areas contaminated by oil spills need to be actively cleaned up, which is a slow process. The necessary clean-up operations may themselves, unavoidably, harm marine life and coastal habitats. Oil spills can also have serious repercussions for tourism and commercial fisheries.

HELCOM's Work

Background information to the Baltic Sea Informal Meeting of Ministers of the Environment

22–23 November 2005, Stockholm, Sweden

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Baltic Marine Environment Protection Commission
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Introduction

The 1974 and 1992 Conventions on the Protection of the Marine Environment of the Baltic Sea Area (the Helsinki Convention) were created, signed and ratified by the riparian countries for two reasons, firstly due to the special nature of the Baltic Sea and its environmental problems and secondly due to the fact that measures to prevent and eliminate pollution entering the Baltic Sea must be developed and implemented mainly by the riparian countries. An added value has been the sincere interest of all stakeholders in doing their utmost for their common marine environment.

The overall objective of the Baltic riparian countries is to restore and protect the ecosystems of the Baltic Sea, thereby obtaining a sustainable balance between human activities in river basins and in the open sea.

The vision for the future is a healthy Baltic Sea environment with diverse biological components functioning in balance, resulting in a good ecological status and supporting a wide range of sustainable economic and social activities.

In pursuing this objective and vision the riparian countries have jointly pooled their efforts in HELCOM, the governing body of the Helsinki Convention, which is working as:

- an **environmental policy maker** for the Baltic Sea area by developing common environmental objectives and actions;
- an **environmental focal point** providing information about (i) the state of/trends in the marine environment; (ii) the efficiency of measures to protect it and (iii) common initiatives and positions which can form the basis for decision-making in other international fora;
- a **body** for developing, according to the specific needs of the Baltic Sea, Recommendations of its own and Recommendations supplementary to measures imposed by other international organisations;
- a **supervisory body** dedicated to ensuring that HELCOM environmental standards are fully implemented by all parties throughout the Baltic Sea and its catchment area; and
- a **co-ordinating body**, ascertaining multilateral response in case of major maritime incidents.

For three decades HELCOM has been working to protect the marine environment of the Baltic Sea. This work has been driven by the specific environmental, economic and social situation in the Baltic region and the specific sensitivity of the Baltic Sea. The work of HELCOM has led to improvements in various fields, but further work is still needed.

For HELCOM, the EU enlargement means that eight out of nine Baltic Sea States are also member States of the EU. Still not all Baltic coastal states are members of EU, as is also the case for some states within the Baltic Sea catchment area. Even with the European Marine Strategy, and emphasizing its importance, HELCOM, through its well-established co-operation involving also non-EU Member States, will continue to play a key role in assessing the environmental state of the Baltic Sea and elaborating measures for its protection. This contribution will be instrumental to successfully implementing the EU Marine Strategy.

Below is an outline of the work already undertaken as well as planned by HELCOM.

Implementing an ecosystem approach

Since the 1970s, HELCOM has had a holistic approach to the restoration and protection of the Baltic Sea marine environment, taking into account the whole ecosystem as well as economic, social, recreational and cultural aspects of the people living in the riparian countries.

HELCOM actions

HELCOM has used broad scientific advice as the basis for decision-making by regularly producing comprehensive assessments on the pressures affecting the marine environment and their effects on the whole marine food web. Since the 1990s HELCOM has promoted the implementation of integrated coastal zone management covering the whole Baltic Sea area.

HELCOM is currently developing tools for determining the full range of measures which are necessary to consistently implement an ecosystem approach to the management of human activities in the marine environment, including amongst others:

- Ecological Objectives;
- indicator based assessment procedures;
- targeted and timely assessments on the state of/trends in the marine environment; and
- revised monitoring programmes.

By 2010, HELCOM will develop a full set of management measures that are consistent with an ecosystem approach.

Improving the knowledge base required for implementing an ecosystem approach

HELCOM has during its 30 years of existence closely cooperated with the scientific community through its own scientific network as well as by having several scientific organisations as observers, including International Council for the Exploration of the Seas (ICES), Intergovernmental Agreement on the Conservation of Small Cetaceans of the Baltic and North Sea (ASCOBANS), Baltic Operational Oceanographic System (BOOS), Intergovernmental Oceanographic Commission (IOC), and BirdLife International.

HELCOM is coordinating, through the Baltic Sea Regional Project, a scientific programme to further develop sound, widely accepted scientific advice on fisheries and the marine environment, based on research into the structure and functioning of marine ecosystems.

HELCOM's activities aimed at further improving the knowledge base on the pressures of human activities and their effects include:
- an open and transparent data handling policy;
- regular publishing of thematic and integrated assessment reports on the status of/ trends in the Baltic Sea environment, including emerging threats; and
- the development of a web-based environmental information system, which will be accessible through the HELCOM website (www.helcom.fi). Presently the system combines data from different sources in order to help users to e.g. visualise the risks of maritime transportation on the Baltic Sea and the capacity to handle these risks.

Favourable conservation status of Baltic Sea biodiversity

The Baltic Sea ecosystem has a low biodiversity due to its brackish nature. This means that each individual species has a particularly important role in the structure and dynamics of the ecosystem – thus making the Baltic ecosystem especially vulnerable to external disturbances.

A number of human activities, such as pollution (nutrient and hazardous substances), coastal development, fisheries and transfer of alien species, threaten the biodiversity and habitats of the Baltic Sea. These activities have affected many of the top predators, fish stocks and plants of the Baltic Sea.

HELCOM actions

HELCOM has made significant efforts to reduce the impacts of human activities on the marine environment and several positive effects on biodiversity can be recognised. Some success stories resulting from HELCOM conservation work include:
- the recovery of the white-tailed eagle around the Baltic Sea;
- the return of the cormorant to the whole region;
- early signs of recovery in Baltic wild salmon populations; and
- increasing numbers of seals in northern areas of the Baltic Sea.

At the HELCOM Ministerial Meeting in June 2003 further measures to improve nature conservation and the protection of biodiversity were agreed upon. The aims of these measures are:
- to strengthen the role of HELCOM in coordinating nature conservation work in the Baltic Sea area;
- to intensify co-operation with international fisheries organisations to reduce the adverse environmental impacts of commercial fishing;
- to apply an ecosystem approach in the coordinated management of all economic activities; and
- to plan all activities related to the marine environment in an integrated way.

Furthermore, HELCOM has undertaken activities:
- to analyse and revise existing national and international red lists of threatened species and habitats in the Baltic Sea marine and coastal area as a contribution to the development, by 2005, of a common proposal with OSPAR for a programme aimed at enhancing the protection of species and habitats in European marine waters, with the purpose of producing suggestions for consideration by the European Commission for amendments to the annexes to the Birds and Habitats Directives;
- to develop a management plan for seals.

Establishing a representative network of marine and coastal protected areas

As much as 90 % of the marine and coastal biotopes around the Baltic Sea are to some degree threatened and many of these are important habitats for rare or endangered species. Many coastal areas around the Baltic are being rapidly built up, increasing the fragmentation of

natural habitats, and activities such as commercial fisheries have impacts that threaten the sustainability of certain species.

HELCOM actions

In 1994, 62 Baltic Sea Protected Areas (BSPAs) were designated under HELCOM in near-coastal areas of the Baltic Sea. Since then, an additional 24 offshore areas in need of protection have been identified by experts. In order to harmonize the approaches and the implementation processes for marine protected areas in the Northeast Atlantic and the Baltic Sea, HELCOM and OSPAR have jointly developed a detailed work programme on protected areas, including a concrete timetable for implementation by 2010.

Some of HELCOM's tasks to further develop the BSPA network include:

- to evaluate, by 2006, whether the BSPAs already identified are sufficient to constitute an ecological coherent network of HELCOM /OSPAR marine protected areas, and to take steps to identify and fill any gaps by 2010;
- to implement the Joint HELCOM/OSPAR work programme of marine protected areas;
- to develop principles for management plans for the BSPAs; and
- to develop a database for information on BSPAs.

HELCOM will also develop joint activities and organise training seminars/courses on the management of marine protected areas, while encouraging collaboration on the protection of BSPAs between countries that share a coastal or offshore BSPA.

Reducing the risk of accidental, and preventing intentional, introduction of alien and invasive species

Due to its low biodiversity, the Baltic Sea is considered to be particularly sensitive to bio-invasions and this sensitivity has been confirmed by over 100 species of non-indigenous organisms reported in the Baltic Sea. The risks are further increased by large amounts of ballast water transported by rapidly growing shipping activities and channels connecting the Baltic Sea to the Caspian and Black Sea basins.

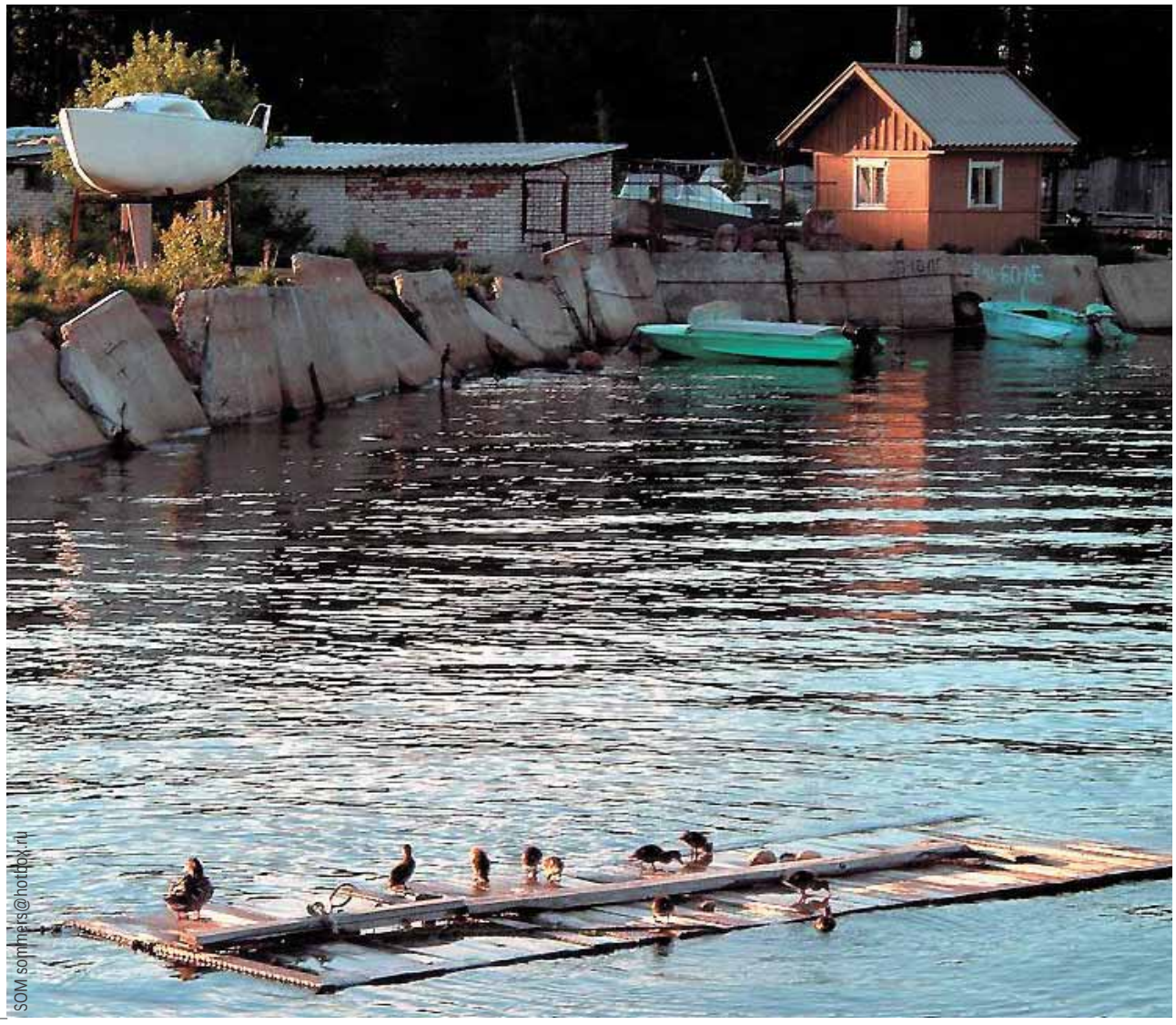
HELCOM actions

There have been a number of HELCOM activities related to the problem of non-indigenous organisms in the Baltic Sea region. Since 1997, all the marine invasions are registered in an on-line database accessible through the HELCOM website. A number of scientists from different Baltic Sea costal states are actively working in this field and several projects dealing with the issue have been carried out in the region. Since 2003 HELCOM has been administrating the World Bank/GEF funded Baltic Sea Regional Project (BSRP) which, inter alia, has an activity dealing with the problem of non-indigenous organisms and is strengthening the cooperation among various institutions active in this field in the Baltic.

After the adoption of the International Convention for the Control and Management of Ships' Ballast Water and Sediments (Ballast Water Convention) in 2004 the decision has been taken by the Helsinki Commission to go for regional implementation of the Ballast Water Convention, and where appropriate, seeking arrangements for joint efforts with other regions. The first task on the way to regional implementation is the development of a regional action plan (including concrete objectives, steps and target dates) to ensure rapid and harmonised implementation of the Ballast Water Convention in the Baltic.

Reducing inputs of hazardous substances to the marine environment with the ultimate aim to reach concentrations of such substances in the marine environment near background values for naturally occurring substances and close to zero for man-made synthetic substances

High concentrations of hazardous substances have had serious effects on Baltic marine ecosystems with contaminants such as PCBs and dioxins affecting the health of seals populations



SOM sommers@hotbox.ru

by disrupting their immune systems and affecting their reproductive capacity. The transfer of dioxins up marine food chains has been observed in fish-eating birds and their eggs and some fish caught in the Baltic Sea exceed the new EU limits on concentrations of dioxin in food and livestock feed. Due to the specific vulnerable conditions of the Baltic Sea ecosystem and different socio-economic factors, such as use patterns in the Baltic Sea region, there is a need to:

– apply more stringent measures to combat pollution by hazardous substances compared to other areas; and
– apply measures different than those applied in other regions.

HELCOM actions

From the beginning of its work, HELCOM has been committed to "counteract" hazardous substances, and already in the 1974 Convention the input of substances such as DDTs, PCBs, heavy metals and some pesticides into the Baltic Sea and it catchment area was prohibited. The 1992 Convention includes 29 banned or restricted hazardous substances and more than 20 Recommendations addressing hazardous substances have been adopted through the years. HELCOM-organised scientific and technical assessments contribute greatly to the growth in knowledge about the Baltic environment and state policies and practices. HELCOM has also become increasingly active in monitoring implementation and building state capacities for policy making and implementation.

As a result of HELCOM's activities, the loads of some hazardous substances to the Baltic Sea have been reduced considerably over the past 20 to 30 years. In particular discharges of heavy metals have decreased, although their concentrations in the Baltic Sea are still many times higher than in the Northern Atlantic and no clear general trends have been observed for some heavy metal concentrations in marine biota since 1990.

The 50 % reduction target of some 46 hazardous substances included in the 1988 Ministerial Declaration has been largely reached. This 50 % reduction target is thus replaced by HELCOM's objective to prevent pollution of the convention area by continuously reducing discharges, emissions and losses of hazardous substances towards the target of their cessation by the year 2020, with the ultimate aim of achieving concentrations in the environment near background values for naturally occurring substances and close to zero for man-made synthetic substances.

HELCOM has compiled all available data on sources, pathways, markets and the legal situation relating to selected hazardous substances, in order to assess the exposure situation and identify suitable cost-effective measures. Subsequent guidance documents on mercury, cadmium, short-chained chlorinated paraffins, nonylphenol and nonylphenolethoxylates, dioxins and PCBs have been produced to help policy makers to choose the most efficient instruments and measures to eliminate the emissions, discharges and losses of these hazardous substances.

HELCOM is currently working on developing a strategy for data collection on the occurrence of hazardous substances in markets and in use in the Baltic Sea region, with particular focus on Russia. The improved knowledge about the sources and inputs of hazardous substances will facilitate the establishment of national programmes for implementation of the HELCOM objective regarding hazardous substances.

Preventing pollution from ionizing radiation with the ultimate aim to reach concentrations in the marine environment near background values for naturally occurring radioactive substances and close to zero for artificial radioactive substances

The levels of anthropogenic radionuclides are higher in the Baltic Sea than in other water bodies around the world. Compared to the North East Atlantic and the North Sea the concentrations of caesium-137 in the Baltic Sea are 40 and 10 times higher, respectively. This is due to atmospheric nuclear testing in the 1960s and the Chernobyl accident in 1986. Also discharges of radionuclides into the Irish Sea from Sellafield are traceable in the Baltic Sea. Liquid discharges from nuclear power plants in the Baltic Sea are estimated to be low.

HELCOM actions

HELCOM has since 1984 collected monitoring data on radioactivity in the Baltic Sea. These data cover both radioactivities in the Baltic marine environment and in discharges from nuclear installations (nuclear power plants and nuclear research facilities) within the catchment area of the Contracting Parties to HELCOM.

HELCOM will in the future continue to monitor and follow closely both radioactivity concentrations in the marine environment as well as the level of radioactivity in the discharges from Baltic nuclear installations. This includes both elaborations of annual indicator reports on the trends and levels of artificial radionuclides as well as more thematic assessment reports. The results from the monitoring are also used to assess potential health risk to humans due to radioactive exposure.

Controlling all sources of nutrients required to eliminate human induced eutrophication

With limited water exchange between the Baltic and North Seas and due to the large input of freshwater run-off into the Baltic Sea and salinity differences preventing deeper waters from mixing with oxygen-rich surface waters, oxygen depletion, particularly in deep basins, is a natural problem in the Baltic. However, eutrophication induced by excessive nutrient input has considerably worsened this threat to marine ecosystems, and biodiversity and fish stocks are affected and exceptional algal blooms have become more common.

HELCOM actions

Since the 1980s, HELCOM has been accessing the input of nutrients into the Baltic Sea by Contracting Parties. Assessments are annual and every five years HELCOM publishes a Pollution Load Complication. Also, since the late 1980s, HELCOM has been working to implement the 50 % reduction targets for nutrient emissions and discharges set by the 1988/1998 Ministerial Declarations, which is now gradually being taken over by a general objective to reach good ecological status. The implementation of HELCOM and other requirements in the Baltic Sea region have resulted in a significant reduction of nutrient loads from point sources, with the 50 % reduction target having been achieved for phosphorus.

To continue the work aimed at reducing eutrophication, HELCOM's major focus will be to reduce inputs from diffuse sources, especially agriculture, not forgetting the significance of airborne nitrogen. Additionally, the implementation of pollution reduction measures by 2012 at the latest at the most polluted sites (hot spots) in the Baltic Sea catchment area, as identified in the Baltic Sea Joint Comprehensive Environmental Action Programme (JCP), is also one part of the HELCOM strategy to combat eutrophication. To date, 62 of the original 149 hot spots/sub hot spots have been deleted, contributing to significant reductions in nutrient discharges from point sources.

Additional HELCOM near-future tasks are:
- to indicate the most cost-effective measures for reducing nutrient pollution in the different sub-regions of the Baltic Sea, based on assessment of the most important pollution sources;
- to assess the possible impacts of agricultural policies of Contracting Parties, including the implementation of the reformed EU Common Agricultural Policy, considering the specific needs in the Baltic Sea region;
- to facilitate the establishment and implementation of national programmes in HELCOM Contracting Parties to reduce nutrients;
- to enhance capacity building and raise awareness through the Baltic Sea Regional Programme, especially for farmers; and
- to identify sources of airborne nitrogen pollution and to propose solutions for its reduction, mainly by addressing decision-making in other fora.

Improving compliance with all existing discharge regulations for ships and further reducing the environmental impact of shipping, inter alia, by developing and applying the concept of the "Clean Ship" and further promote "safe shipping"

The Baltic Sea is considered to have among the world's most dense shipping traffic. Moreover, the transportation of oil and other dangerous goods is growing significantly every year. The intense shipping activities can have negative impacts on the sensitive marine environment of the Baltic Sea. Major impacts of shipping to the marine environment addressed by HELCOM are pollution by ship-generated waste (more oil is ending up in the Baltic Sea through illegal discharges than through accidents, given that no major accident happens), air pollution (about 20 % of NOx entering the Baltic Sea originates from ships) and accidents.

HELCOM actions

Ship-generated waste

With its history of cooperation with the International Maritime Organization (IMO), HELCOM

Contracting Parties have brought to global recognition the sensitivity of the Baltic Sea, and thus obtained for the Baltic Sea a Special Area Status under MARPOL Annexes I, II and V, on oil, noxious substances and garbage respectively.
In an effort to further address, on a Baltic specific level, the problem of ship-generated waste, HELCOM has since the late 1990s been working to implement a comprehensive set of measures to reduce pollution by ship-generated waste (known as the Baltic Strategy for Port Reception Facilities for Ship-Generated Wastes and Associated Issues). The cornerstones of the Baltic Strategy are adequate port reception facilities, mandatory discharge and efficient law enforcement. The Baltic Strategy has proven to be an effective tool for addressing ship-generated waste with a reduction in detected illegal oil discharges despite increasing surveillance flight hours and increased reception of waste at port reception facilities. Therefore, its full and harmonised implementation remains high on the agenda of HELCOM. Further steps for its implementation are:

- to develop a unified regime for exemptions from the mandatory delivery/No Special Fee and a recommendation to asses the implementation of the Baltic Strategy in the ports;
- to facilitate the work on the investigation and prosecution of violations of antipollution regulations;
- to strengthen cooperation with neighbouring regions promoting the principles of the Baltic Strategy; and
- to raise the awareness of sailors and the general public.

Air pollution

Contracting Parties have also achieved the designation of the Baltic Sea as Special Area under MARPOL Annex VI (Air pollution) and are therefore assessing whether there is room/need for additional HELCOM measures to address emissions from shipping (including, e.g. NOx, SOx, green-house gases and ozone- depleting substances).

Safety of navigation

Since signing of the Helsinki Convention, HELCOM has worked to ensure the safety of navigation in the Baltic Sea. Various routing and pilotage measures have been adopted in the IMO after coordinated submissions by the HELCOM Contracting Parties. In 2001 the Contracting Parties agreed on the road ahead by adopting the HELCOM Ministerial Declaration on the Safety of Navigation and Emergency Capacity in the Baltic Sea area (HELCOM Copenhagen Declaration) containing a vast variety of measures e.g. hydrological surveys, use of electronically navigational charts, routing measures, cooperation with the shipping industry, implementation of AIS, investigation of casualties and many more. Some of the agreed measures have already been implemented (e.g. Recommendation on Safety of navigation in ice conditions), others are well under way. Additionally, specific short-term tasks are:

- to identify the needs and possibilities for additional measures to increase the safety of navigation, such as routing, pilotage, escort towing;
- to investigate the legal aspects and possibilities for cooperation between the Contracting Parties on the issue of places of refuge.

Accident response

Preparing to react to a pollution incident at sea, the HELCOM Contracting Parties created a standing operational network for transnational co-operation in case of incidents. There are requirements for preparedness in ports, terminals, offshore units and for preparedness at national level. Procedures of cooperation have been developed and are regularly being tested during national and international exercises. In addition, Contracting Parties are carrying out regular aerial surveillance flights in order to detect pollution incidents and to identify polluters.

The main HELCOM tasks in the response field are:

- to maintain and further develop the standing operational network for transnational co-operation in case of incidents;
- to develop a three tier system to ensure adequate response to incidents in the Baltic Sea area - consisting of national capacity, sub-regional capacity and capacity for the Baltic as a whole;
- to co-ordinate operational exercises and aerial surveillance flights, including the possible use of satellites; and
- to ensure adequate emergency capacity in order to prevent pollution incidents at a very early stage.

HELCOM will also continue to collect and analyse relevant statistical and scientific information to support the decision-making process.

Improving enforcement of waste legislation and developing more effective waste management, including campaigns to increase public awareness about the environmental problem of litter

The problems caused by ship-generated waste are addressed by the HELCOM Baltic Strategy for Port Reception Facilities for Ship-Generated Wastes and Associated Issues as described earlier in this report. Additionally, HELCOM's tasks are:

– to ensure availability of waste reception facilities in ports, including marinas and fishing harbours; and
– to uphold the web-based information system on waste collection in the Baltic ports and to disseminate the "Clean Seas Guide".

Carrying out environmental and strategic impact assessments for ongoing and new human activities

There is an increase of activities in the coastal and marine areas of the Baltic Sea, some of which might have a significant environmental impact to the marine environment. Some activities also have detrimental transboundary environmental effects.

HELCOM actions

In the case of any activity likely to cause a significant adverse impact to the marine environment of the Baltic Sea, the Helsinki Convention contains a general reference to requirements in international law or supra-national law for carrying out environmental impact assessments. In addition, the HELCOM Recommendation on "Information and consultation with regard to construction of new installations affecting the Baltic Sea" prescribes that an environmental impacts assessment should be carried out for activities with significant impact to the environment as well as effects to another Baltic Sea State and the Baltic Sea itself. For offshore activities the Helsinki Convention contains an international law requirement to carry out an environmental impact assessment.

HELCOM is presently in the process of examining existing procedures to see whether they are sufficient, and also looking for a procedure to harmonise implementation.

Reducing the impacts of fishing activities on the marine environment to ensure sustainable fisheries and contributing to healthy ecosystems

The impacts of fishing activities in the Baltic Sea have been well known for some time with indications of salmon and cod stocks being severely threatened. Fish stocks in the Baltic Sea, however, are not only threatened by fisheries activities but also by pollution. Fisheries activities in the Baltic Sea also have serious impacts on non-target species through by-catch of harbour porpoises, seals and migrating birds as well as non-commercial fish species.

HELCOM actions

HELCOM has been in close cooperation with International Baltic Sea Fisheries Commission (IBSFC), including a joint seminar on fisheries issues and environmental protection in the Baltic Sea, which was held in 2002. HELCOM has actively contributed to the restoration of the Baltic Salmon through the Salmon Action Plan jointly elaborated with the IBSFC. In addition, HELCOM has given political support to the Jastarian Plan for the recovery of the harbour porpoise in the Baltic Sea, which is coordinated by ASCOBANS.

Since 2003, HELCOM has been managing the World Bank/GEF funded Baltic Sea Regional Project (BRSP), which, inter alia, has a specific activity dealing with the sustainability of fisheries and is strengthening the cooperation among various institutions in the Baltic region that are active in this field. Indirectly, also HELCOM's activities with marine protected areas as well as reducing nutrient and hazardous substance inputs to the Baltic Sea have positive effects on the marine environment and fish stocks – thus contributing to the sustainability of fish stocks.

HELCOM near-future activities which aim to contribute to the sustainability of fisheries and reduction of its impacts on the environment include:

– the promotion of actions to mitigate environmental impacts of fisheries within the Baltic Regional Advisory Council under the Common Fisheries Policy;
– the establishment of a plan to evaluate the environmental impacts of fisheries on the marine ecosystem in the Baltic;
– the promotion of the establishment of inventories of Baltic Sea fish species and contribution to a list of species that are threatened, declining, or in need of protection;

– the promotion of the establishment of marine protected areas, especially in areas considered to be important spawning and nursing grounds; and
– the intention to develop and adopt a new Annex to the 1992 Helsinki Convention by 2007 dealing with "Sustainable use of marine natural resources, nature conservation and biodiversity" and taking into account the environmental impacts of fisheries.

Reducing the environmental impact of the exploitation of non-renewable marine resources

Sediment extraction

Sand and gravel deposits in the Baltic Sea are mainly of glacial origin or the results of slow postglacial erosion processes. Extracted sediment therefore cannot be replaced by natural processes. Furthermore, sand and gravel layers in many cases are very thin, thus sediment extraction may lead to the exposure of residual sediments or bedrock. This would significantly change benthic life and, consequently, feeding conditions for sea ducks and fishes. In the Baltic Sea, marine sand and gravel have to be considered a finite resource. Its exploitation must be accompanied by great consideration of environmental consequences which include considerable impacts to the marine environment and fish stocks. Especially benthic marine flora and fauna are destroyed at the extraction site and may be affected by dispersion and sedimentation of suspended material also beyond the extraction area.

HELCOM actions

Marine sand and gravel resources are widely distributed in the Baltic Sea area and marine sediment extraction is of increasing economical importance in many regions of the Baltic Sea. In an effort to reduce the environmental impact of sediment extraction, HELCOM has developed a Recommendation which requires that an environmental impact assessment be carried out prior to sediment extraction permits and specific guidelines for extraction have to be followed in order to minimise environmental impact and secure regeneration of

marine and coastal ecosystems. In addition, sediment extraction in sensitive areas is restricted.

Offshore activities

There have been only very limited offshore activities in the Baltic so far. Nevertheless, the increased interest in possible oil reserves in the shelf observed during recent years, the sensitivity of the Baltic marine and coastal ecosystem as well as the slow water exchange rate of the Baltic Sea indicate the need to examine the sufficiency of existing international environmental regulations in the region. In addition, the impacts of offshore wind farms need to be evaluated.

HELCOM actions

Several HELCOM regulations addressing various aspects of the offshore activities are also in place in the Baltic region. Following the increase in offshore activities, HELCOM has decided that attention should be given to ensuring information exchange about planned and ongoing offshore activities. The information collected through this process will be used to assess the need for additional measures to prevent intentional and accidental releases from offshore activities and the preparedness to respond to them.

Promoting the application and wider use of management tools such as adaptive management, ICZM and spatial planning to contribute to sustainable development

HELCOM actions

HELCOM has a long tradition in ensuring the integration of environment protection aspects into the different sector activities affecting the marine environment. HELCOM Recommendations cover e.g. integrated management of human activities in coastal and marine areas of the Baltic Sea, protection of the coastal strip, preservation of natural coastal dynamics, marine sediment extraction, environmentally friendly tourism in the coastal zones of the Baltic Sea, protection of heavily endangered or immediately threatened marine and coastal biotopes in the Baltic Sea area and establishment of a network of coastal and marine Baltic Sea Protected Areas.

The World Bank/GEF funded Baltic Sea Regional Project includes coastal zone management activities with the aim of contributing to balanced and sustainable development of selected coastal areas by means of cross-sector integration,

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which contributes to improved livelihoods of local communities through better use of natural resources. This is a follow up to the HELCOM PITF Working Group on Management of Lagoons and Wetlands (some of which are JCP Hot Spots) and will support the implementation of HELCOM Requirements on ICZM. The focus is on small scale investments for demonstration and outreach purposes.

The present and near-future activities of HELCOM focus on:
- promoting the implementation of integrated marine and coastal management of human activities in the Baltic Sea area;
- facilitating establishment of management plans for BSPAs using the principles of integrated coastal zone management;
- producing targeted and timely assessments as well as coordinating supporting monitoring programmes based on the specific features of the Baltic Sea.

Promoting coherence between policies with the aim of reducing the impact of all human activities on the marine environment

HELCOM acts as an environmental focal point providing information on one hand about the state of/trends in the marine environment and on the other hand on the efficiency of measures to protect it. HELCOM promotes common initiatives and positions of the Baltic Sea coastal states which can form the basis for decision-making also in other international fora.

HELCOM actions

At the HELCOM Ministerial Meeting in 2003, Ministers decided that there is a need to plan all activities relating to the marine environment in an integrated way. With this in mind, HELCOM contributes to the coherence between policies, inter alia by:
- promoting the mitigation of the environmental impacts of fisheries by participating in the Baltic Regional Advisory Council under the EU Common Fisheries Policy;
- providing input to the reform of the Common Agricultural Policy; and
- promoting the implementation of the Common Agricultural Policy, e.g. through the Baltic Sea Regional Project, in order to accelerate the process of integrating environmental aspects and sustainable development in agriculture.

Promoting compliance and enforcement of legislation dealing with the protection and conservation of the marine environment

One of HELCOM's roles is to keep under continuous observation the implementation of the Convention and the approximately 200 Recommendations adopted there under. For this purpose the Contracting Parties are under an obligation to regularly submit compliance reports on measures taken to implement the Convention and Recommendations, the efficiency of these measures and possible problems encountered in the implementation.

HELCOM actions

Since the late 1980s, the various working groups under HELCOM have regularly elaborated compliance reports for consideration by HELCOM. The compliance reports have been used to assess the status of implementation in the various Contracting States and areas where further progress is needed. Further steps include:
- to elaborate compliance reports in a more thematic way, addressing, inter alia, eutrophication caused by nutrient inputs from agriculture or oil pollution stemming from maritime transportation;
- to link these thematic compliance reports with reports on pollution loads entering the Baltic and reports on the environmental status of the Baltic Sea; and hereby
- to assess whether pollution inputs have decreased and whether environmental status has improved as a result of the implementation of the adopted and implemented measures.

Promoting more effective co-ordination and co-operation between different institutions and regional and global conventions and action plans

HELCOM is an outstanding example of good co-operation over three decades. Consensus based decisions are implemented through national legislation in all Baltic Sea countries. The new political situation with the EU enlargement, multiple levels of legislation and several organisations active in the region requires effective cooperation and coordination.

The overall role of HELCOM can be seen as an environmental policy maker for the Baltic Sea area for developing common environmental objectives and actions. HELCOM's objective is also to co-ordinate its work and co-operate with other

international organisations at global and regional (Baltic) levels to ensure synergism and complementarity with working programmes of different organisations as well as to promote common HELCOM initiatives and proposals through these organisations.

Within the maritime field, special efforts have additionally been devoted to the enforcement of contraventions of discharge regulations for ships. Co-operation with the Prosecutors General in the Baltic Region has been established to ensure close collaboration in combating these transnational environmental crimes, and also to ensure that there are mutual efforts between those gathering the evidence of an illegal discharge, those investigating it and those eventually prosecuting a suspected offender. The next step is to enhance this co-operation by also including the North Sea prosecutor's network.

HELCOM also cooperates on specific issues as a contribution to the development of partnerships in accordance with the commitments made at the 2002 World Summit on Sustainable Development.

Specific HELCOM tasks in the near future are:
- to continue the twinning arrangement with the Nairobi Convention for the seas of East Africa;
- to co-operate with OSPAR as outlined in the joint HELCOM/OSPAR Bremen Ministerial Declaration 2003.

Promoting increased awareness and wide stakeholder participation

HELCOM's objective is to provide information about the state of trends in the unique Baltic Sea marine environment, the efficiency of measures to protect it and common initiatives and positions which can form the basis for decision-making. With this regard HELCOM elaborates strategies for increasing political and public interest in the Baltic Sea environment and the work of the organisation.

HELCOM actions

HELCOM's work is characterised by openness and transparency, which is emphasised by the participation and contribution of observers to the work of HELCOM. HELCOM also regularly arranges its annual governing body meetings on ministerial level, with the participation of the ministers responsible for the environment, agriculture and transport.

While HELCOM has from its very beginning been the focal point for environmental information in the Baltic Sea region, HELCOM has lately also adopted an Information and Communication Strategy, supervised and implemented by an Information Secretary.

HELCOM has set up and operates an integrated Baltic Sea environment information system, which incorporates and utilises a whole array of tools starting from online data services to scientific publications and public awareness actions. Examples of this include:
- collecting and disseminating environmental data for over 25 years;
- producing more than a hundred publications, containing valuable environmental information on different topics and issues, including periodic assessments of pollution load and overall environment assessments, safety of navigation and nature conservation and biodiversity in the Baltic Sea area;
- maintaining a HELCOM web-site (www.helcom.fi);
- setting up GIS-based information systems on the web site, such as the Maritime Accident Response Information System and the virtual Atlas of the 62 Baltic Sea Protected Areas;
- publishing press releases, newsletters, brochures;
- organising different media events, including productions of TV and Radio programmes with participation of news organisations of the Baltic Sea countries.

HELCOM also runs specific projects aimed at raising awareness of certain issues, and several projects include components on awareness-raising – for example the HELCOM administrated World Bank/GEF funded Baltic Sea Regional Project has a programme to educate farmers about the environmental impacts of agriculture.

In the near future HELCOM will continue to advance these activities with special emphasis on timeliness of information and targeting of information to the end-users.

Baltic Sea Action Plan

Background information to the Baltic Sea Informal Meeting of Ministers of the Environment

22–23 November 2005, Stockholm, Sweden

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Background

Following, inter alia, the decisions made by the World Summit in Johannesburg the 2003 HELCOM Bremen Ministerial meeting agreed that implementing the ecosystem approach will be among the priorities for the HELCOM work in the future.

During the 26th meeting of the Helsinki Commission (HELCOM 26/2005) and the 17th meeting of the Heads of Delegation (HOD 17/2005) the Coastal States of the Baltic Sea and the European Union agreed on the need to develop a Baltic Sea Action Plan to serve as a major tool in applying the ecosystem approach within the Baltic Sea eco-region and that HELCOM will play a leading role in this process.

The Baltic Sea Action Plan will be developed jointly by all Contracting Parties on the basis of the Helsinki Convention, taking into account the different obligations of the Contracting Parties with regard to EU regulations. The importance to involve stakeholders in the development of the Baltic Sea Action Plan both on national and on international level has been emphasised.

It has also been agreed that the HELCOM process to develop Ecological Objectives (EcoOs) and associated indicators for the Baltic should be seen as a first step in developing an Action Plan for the Baltic and, thus, the EcoOs and associated indicators should be used to evaluate the efficiency of existing measures and to guide future management measures for the Baltic.

These ideas have been welcomed on several occasions by high level politicians, e.g.

- The 13th Ministerial Session of the Council of the Baltic Sea States (CBSS);
- The 6th VASAB Conference of Ministers responsible for spatial planning and development of the Baltic Sea Region;
- The 14th Baltic Sea Parliamentary Conference (BSPC).

In accordance with the HELCOM Bremen Declaration of 2003 it has also been agreed that the role of HELCOM is to act as partner in the development and implementation of the European Marine Strategy to ensure that this strategy will complement and work to achieve the HELCOM objectives.

Contents

The basis for the Baltic Sea Action Plan will be:

- The state of the marine environment of the Baltic Sea Area, pressures and threats identified through HELCOM's monitoring and assessment programmes impacting upon the Baltic Sea Area and, thereby, the four main environmental issues identified for priority action; i.e. eutrophication, hazardous substances, maritime safety as well as loss of habitats and biodiversity.
- The Ecological Objectives for each of these four main environmental issues, linked to the HELCOM monitoring and assessment programmes, and hereby ensuring policy-relevant monitoring and assessment products enabling to measure whether we are proceeding towards the agreed objectives and targets.

On the basis of this the Baltic Sea Action Plan shall be drawn up. The Plan shall include:

- an identification of measures needed to achieve the environmental objectives within a given timeframe; and
- an assessment of their environmental, social and economic costs and benefits.

The Plan shall distinguish between actions that can be implemented at regional or at national level and measures that can only be implemented at the level of the EU (Common Fisheries Policy, Common Agricultural Policy, marketing and use of chemicals) or globally (e.g. shipping through the International Maritime Organisation). In the latter case, actions identified would serve as joint HELCOM input for actions to be taken at the European Commission or at global level.

The Baltic Sea Action Plan will thus provide:
- an overall Plan stressing Baltic regional viewpoints and the specific requirements needed to ensure a healthy Baltic Sea embraced by all the countries in the Baltic Sea catchment area, including Contracting Parties to the Helsinki Convention and Ukraine, Belarus and the Czech Republic (the two former in their capacity as observer States to HELCOM and the latter through cooperation with HELCOM and the IFI's);
- an overall Plan allowing an effective channelling of viewpoints and needs for specific requirements in other relevant international fora, including the EU;
- an overall Plan allowing EU Member States to coordinate their work within EU to reach the set objectives for the Baltic Sea region; and
- an overall Plan allowing the European Community within its work to take into account the set priority objectives and actions of HELCOM for the Baltic Sea marine area as well as stimulating active participation of also the non-EU member states.

Timing

It is proposed that the consultations and final development and adoption of the Baltic Sea Action Plan will take place in the time period between the second half of 2005 and latter part of 2007 with the following indicative steps:
- Ecological Objectives are expected to be adopted during HELCOM 27/2006 including a kick-off stakeholder conference prior to the Commission meeting. The stakeholder conference will be arranged in order to inform on the aim and the foreseen activities to develop the Baltic Sea Action Plan and to get commitments at local, national and regional levels as well as the private sector.
- The permanent HELCOM Working Group structure, with a wide stakeholder involvement will

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be used to develop a proposal for the Baltic Sea Action Plan by 2007.
– A final stakeholder conference, in connection with the HELCOM annual meeting in 2007, will look into the draft Baltic Sea Action Plan with a view for final adoption by a HELCOM Ministerial meeting in the latter part of 2007.

New opportunities

In order to ensure success of the Baltic Sea Action Plan it is important to turn it into actions within the region. One way of doing this could be by linking the Baltic Sea Action Plan to concrete processes and programmes at all levels, whereby:
– The Baltic Sea Action Plan could serve as an input to the Northern Dimension (ND) initiative (especially for the renewal of the ND for the period beyond 2006 when the 2nd Action Plan will expire).
– Regional initiatives, such as Phase II of the BSRP and BONUS *), should be used to support the development and implementation of the Baltic Sea Action Plan.
– The Baltic Sea Action Plan should be taken into account when drawing up national environmental programmes and projects.

Global and EU policies have a major role in the protection of the environment of the Baltic Sea. The inputs to these processes by the Baltic coastal states often do not reflect the needs of the Baltic as a whole, but take into account only national environmental problems.

The Baltic Sea Action Plan should, therefore, be seen as a tool to coordinate the positions within international fora, including the EU. In this respect the position of the Baltic Sea Coastal States should significantly be strengthened especially within the fields of agriculture, fisheries and chemicals. This coordination should build on the knowledge about the health of the whole Baltic ecosystem available from HELCOM (and other sources) as well as make use of the established cooperation mechanism within HELCOM.

Ecological objectives and supporting indicators developed within the Baltic Sea Action Plan will

provide an overview of the health of the Baltic Sea ecosystem and in this way support and strengthen the coordination of views and positions of the Baltic Sea States within the EU and other international fora.

This also means that appropriate attention should be paid both to developing relevant sources of information and to ensuring their use to support decision making.

*BONUS-169 is intended to be a joint programme proposal under Article 169 of the Treaty, involving the eight EU Member States in collaboration with the Russian Federation, aimed at creating a cooperative, well-integrated and focused trans-national research programme for the Baltic Sea region, in order to support the sustainable development of the region through the provision of outputs facilitating implementation of ecosystem-based management. In order to get funding from the European Commission it is necessary that Baltic Countries financially commit themselves to this joint research programme.

Outlook of the Baltic Sea Regional Project (BSRP)

Background information to the Baltic Sea Informal Meeting of Ministers of the Environment

22–23 November 2005, Stockholm, Sweden

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Background

HELCOM is managing the World Bank/Global Environment Facility (GEF) funded Baltic Sea Regional Project (BSRP). The Project has been managed by HELCOM in cooperation with the International Council for the Exploration of the Seas (ICES), the Swedish University of Agricultural Sciences (SLU) and the World Wide Fund for Nature (WWF) of Sweden. The BSRP has been designed according to the principles of the Large Marine Ecosystem (LME) concept, which is one of the cornerstones of worldwide marine protection policies designed to promote sustainable use of the seas and to conserve marine ecosystems.

The aim of the Project is to implement *the ecosystem approach* by linking activities inland, along the coast, and in the open sea, and by ensuring that consideration is given to their interdependence. A key element in this process is to strengthen human, scientific and technical capacity of the beneficiary countries to manage human activities having an impact on the Baltic ecosystems.

The Project activities have been divided between two overall components: marine activities which take place both in the open sea and in the coastal area; and agricultural activities implemented inland. Between these two components close links are maintained between scientists and institutions around the Baltic to promote the adoption of working plans that incorporate knowledge from the sea and from the land.

The Project started in 2003 and has now less than one year left in its first phase, and implementation arrangements for the continuation of the Project are ongoing.

The first phase of the Project has involved:
- establishment of a regional framework for introduction of the ecosystem approach in managing human activities affecting the Baltic Sea Large Marine Ecosystem;
- upgrading the scientific capacity of the participating institutions and laboratories;
- mobilizing partners in management of coastal and open sea marine resources;
- initial activities for land and coastal management; and
- initial investment to mitigate agricultural run-off.

The proposed second phase of the BSRP is projected to focus on demonstration of the Ecosystem Approach. The established technical and scientific capacity of the regional thematic centres of excellence and the network will be used in order to implement and expand the ecosystem approach by activities which support the implementation of the Baltic Sea Action Plan.

Hence, all activities to be designed under the second phase of the BSRP will support HELCOM work within the four identified priority areas; eutrophication, hazardous substances, biodiversity and maritime shipping. This means - based on sound and reliable information on sources of pollution and impacts of human activities affecting the marine environment - concrete outputs for decision-making in HELCOM.

In the second phase of the Project information dissemination and awareness-raising, regarding project progress and outputs will further increase.

Future activities under the BSRP

The main scope of future activities in the second phase of the BSRP is to support implementation of the ecosystem approach in the whole Baltic Sea area by a better understanding of the linkages of inputs and effects between land, coastal and open sea areas. The aim is also to provide better assessments within the priority areas of HELCOM to be a basis for future management of human activities affecting the Baltic Sea. The general frame of the future activities is provided below giving guidance for detailed development of the project implementation plan.

All priority areas

- support development of tested indicators for assessing ecosystem recoveries related to HELCOM Ecological Objectives for all priority areas;
- contribute to development and implementation of a comprehensive, functional and georeferenced database and operational data exchange procedures;
- contribute to completion of the Baltic-wide geographic information system (GIS);
- support implementation of Integrated Coastal Zone Management (ICZM), especially in offshore areas.

Eutrophication and hazardous substances

- support the implementation of the HELCOM monitoring and assessment strategy and the monitoring scheme;
- support HELCOM screening activities on the occurrence of some selected hazardous substances in the Baltic Sea;
- make operational the application of methodologies allowing to assess multiple marine ecological disturbances in the Baltic Sea;
- upgrade regional understanding about the level and environmental impacts of pollution from agriculture as well as about the effects of different countermeasures;
- upscale the application of an Environmental Management System (EMS) for farms and financial mechanisms, including complete environmental investment programs, to support farmers interested in applying the EMS.

Biodiversity

- support development of a conceptual model for biodiversity assessment;
- support development of integrated models as tools for assessing the impact of human activities, including fisheries;
- support implementation of an ecologically coherent network of the Baltic Sea Protected Areas.

Maritime shipping

- support the assessment and development of management practices on invasive species in ballast water;
- support management practices to prevent the potential future use of also other harmful substances than organotin paints in anti-fouling systems.

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