

HELCOM news

1-2/2006 Newsletter



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Earlier this year, HELCOM completed the first step in the development of an ambitious action plan to restore the health of the Baltic Sea. At the 27th annual Meeting of the Helsinki Commission, held on 8-9 March 2006, we approved the key elements of the HELCOM Baltic Sea Action Plan – defining a common vision of a healthy sea, and a set of Ecological Objectives to help us work towards this vision.

HELCOM is now working to identify the actions needed to achieve these agreed environmental objectives. This work will continue until November 2007, when the finalised action plan is scheduled to be approved by the Ministers of the coastal countries.

This is not going to be an easy task, as many environmental, economic, and political challenges lie ahead. But we are confident that in the end HELCOM will succeed in designing a realistic and effective environmental strategy that will ultimately lead to the recovery of the Baltic marine environment.

Anne Christine Brusendorff
Executive Secretary

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Chair's Corner



Poland assumes the chairmanship of the Helsinki Commission



Prof. Ostojki, Director General of the Polish Institute of Meteorology and Water Management, is well known in the Baltic Sea countries. He has great experience in the fields of ecology, environmental protection and water resources management. In 1996-1999 and 2003-2006 he was Head of the Polish delegation to HELCOM, and in 1999-2003 he served as Executive Secretary of the Helsinki Commission.

Prof. Ostojki has succeeded Arturas Daubaras of Lithuania, who chaired the Helsinki Commission in 2004-2006. The chairmanship rotates among the Baltic Sea coastal countries and the EU according to alphabetical order, with changes every two years. As the new Chairman Prof. Ostojki will lead the work of HELCOM until 30 June 2008.

According to Prof. Ostojki, HELCOM's priorities for the next two years include



Warsaw, Poland

On 1 July 2006, Poland assumed the rotating chairmanship of the Helsinki Commission.

The Government of the Republic of Poland has nominated Prof. Mieczyslaw Ostojki as Chairman of HELCOM and Ms. Adriana Dembowska as Vice-Chairman of HELCOM.

the further enhancement of the Commission's role as the key environmental policy-maker in the region, the creation of a strategic HELCOM Baltic Sea Action Plan designed to solve major environmental problems, and the strengthening of co-operation among all the nine Baltic Sea coastal countries and the European Union to protect the Baltic marine environment.

HELCOM's key priorities for today

by Prof. Mieczyslaw Ostojki,
Chairman of HELCOM

Under the Polish Chairmanship, the Helsinki Commission will continue to serve as the key environmental policy-maker for the Baltic Sea area, developing common environmental objectives and actions, and providing information about the state of and trends in the marine environment, the efficiency of measures to protect the sea, and common initiatives and positions which can form the basis for decision-making.

The principle objective of HELCOM's present and future strategies will be to obtain a good ecological status for the Baltic Sea – a sea with diverse biological components functioning in balance and supporting a wide range of sustainable human economic and social activities.

One of the topmost priorities during the Polish Chairmanship will be to finalise the HELCOM Baltic Sea Action Plan. This ambitious but realistic plan will include wide-ranging actions to reduce pollution and reverse the degradation of the marine environment. The basis for the decision made in 2005 to draw up this plan was the present state of the Baltic Sea, and the fact that in spite of environmental protection successes over the last three decades, the measures currently in place will not be enough to cope with mounting pollution and other environmental problems.

HELCOM's innovative work to draw up an environmental action plan, based on a specially defined set of



Ecological Objectives, has already been backed by the European Union, and highlighted as a model to be followed by other regional marine conventions. But there is still a lot of hard work ahead. We have just entered one of the most crucial phases – a period where actions will be defined to help achieve the agreed goal of a Baltic Sea unaffected by eutrophication, undisturbed by hazardous substance, with favourable biodiversity and environmentally friendly maritime activities.

The adoption of the action plan, scheduled to take place at a HELCOM Ministerial Meeting on 15 November 2007 in Warsaw, Poland, will be a major milestone in our joint efforts to make the Baltic Sea a more environmentally sound and healthier place.

Obviously, the future success of the Baltic Sea Action Plan will largely depend on how all the coastal countries and other stakeholders can co-operate to achieve the goal of a healthy Baltic marine environment. The overall state of the Baltic Sea can only be further improved through our combined efforts and integrated actions, and as Chairman of HELCOM, I will do everything in my power to ensure good co-operation among all the coastal countries in developing and carrying out environmental actions.

Gdynia, Poland

Countdown to an environmental strategy

HELCOM's Baltic Sea Action Plan receives strong support from stakeholders

The concept of the Baltic Sea Action Plan received overwhelming support at a Stakeholder Conference held on 7 March in Helsinki, where more than 200 participants, representing scientific and business communities, governments of the coastal countries, the EU, and major regional organisa-

the four key environmental issues (eutrophication, hazardous substances, biodiversity and shipping), and official statements made by high-level politicians.

Keynote speakers included Stefan Wallin, State Secretary of the Finnish

to rescue the marine environment, the State Secretary from the Finnish Ministry of the Environment Stefan Wallin underlined that "HELCOM is the only intergovernmental organisation within the Baltic Sea region with the mandate to deal comprehensively with the problems of the Baltic Sea, and



tions, met to discuss the objectives of the strategy and to provide input for its further development.

One important feature of HELCOM's Baltic Sea Action Plan is that it is being devised with active participation from all major stakeholder groups – from governments, through industry and NGOs, right down to the individuals living on the shores of the Baltic Sea, to ensure that the HELCOM action plan is relevant and can be effectively implemented in practice. The kick-off Stakeholder Conference represented the starting point for this whole process.

The Conference programme included a general presentation of the aims and timing of HELCOM's Baltic Sea Action Plan, a description of the state of marine environment, thematic sessions on the proposed objectives for

Ministry of the Environment; Peter Gammeltoft, Head of the Water and Marine Unit of the Directorate General for Environment at the European Commission; Bob Dekker, OSPAR Chairman; Kornelius Sigmundsson, Chairman of the Committee of Senior Officials of the Council of the Baltic Sea States; Harro Pitkänen, Senior Vice President of the Nordic Investment Bank; Marjukka Porvari of the John Nurminen Foundation; Esa Härmälä, President of the Baltic Farmers Forum on Environment; Gunnar Norén, General Secretary of Coalition Clean Baltic; Sergej Olenin, Klaipeda University; Lasse Gustavsson, director of the WWF Baltic Ecoregion Program; Carsten Melchior, Secretary General of BIMCO; and Tim Wilkins, Environmental Manager of INTERTANKO.

Commenting on the Helsinki Commission's work to create a strategic plan

to jointly agree on implementation of measures to preserve and protect the Baltic marine environment, to conserve natural habitats and biodiversity, and to ensure the sustainable use of natural resources within the Baltic Sea region." Wallin also noted that the preparation of the HELCOM action plan must be open-ended and transparent. "We must use this opportunity when preparing this new Baltic Sea Action Plan to make it as comprehensive and, at the same time, as realistic and action-oriented as possible."

The European Commission described the plan as "the cornerstone for further action" in the Baltic Sea region, and confirmed its intention to take an active part in its development over the coming months. The Commission thinks that in setting a definition of 'good ecological status' for the Baltic Sea as well as specific

to restore the Baltic Sea

environmental targets and necessary measures, the Baltic Sea Action Plan will be instrumental to the successful implementation of the new EU Marine Strategy in the region. In this context, the new plan makes HELCOM a forerunner, and a model to be followed by other regional marine conventions around Europe.

The Council of the Baltic Sea States (CBSS) also backed the HELCOM action plan. The Chairman of the CBSS Committee of Senior Officials, Kornelius Sigmundsson, said that "the CBSS Presidency recognises the value of HELCOM's Baltic Sea Action Plan as a very important aspect of our region's joint efforts to achieve a healthy

Baltic Sea environment." Sigmundsson also added that as an overall political forum for regional intergovernmental co-operation, the Council of the Baltic Sea States will continue to encourage and support HELCOM activities.

HELCOM approves core elements of the Baltic Sea Action Plan

At its annual Meeting held on 8-9 March 2006 HELCOM officially approved the core elements of the new environmental strategy to restore the Baltic Sea - a common vision of a healthy sea, and a set of Ecological Objectives to work towards so as to fulfil this vision.

"The general vision and objectives which we have approved will serve as a foundation for the further development of this innovative environmental strategy, and then during the implementation of the plan dictate the need for specific actions to be taken jointly by the Baltic Sea countries in order to

restore the environment," said Anne Christine Brusendorff, Executive Secretary of HELCOM. "In this way the protection of the marine environment is no longer seen as an event-driven pollution reduction approach to be undertaken sector-by-sector. Instead,

Continues on the following page



26th annual Meeting of the Helsinki Commission decides that the ongoing work of defining Ecological Objectives for a healthy Baltic Sea will provide the foundation for a strategic environmental Baltic Sea Action Plan

17th Meeting of the Heads of Delegation of the Member States, 13-15 June 2005, Helsinki, recognises the need for an environmental Baltic Sea Action Plan, and agrees a tentative timetable for its preparation

HELCOM officially unveils the concept of the Baltic Sea Action Plan, and publishes a popular brochure on the plan in November 2005

Extraordinary Meeting of the Heads of Delegation of the Member States, 4 November 2005, Bonn, decides to organise a kick-off Stakeholder Conference on the Baltic Sea Action Plan in 2006

18th Meeting of the Heads of Delegation of the Member States, 12-13 December 2005, Helsinki, discusses further steps in the development of the Baltic Sea Action Plan, and preparations for the kick-off Stakeholder Conference

HELCOM Maritime Group meeting discusses input to the Baltic Sea Action Plan, 11-14 October 2005, Klaipeda, Lithuania

HELCOM Monitoring and Assessment Group (HELCOM MONAS) meeting discusses input to the Baltic Sea Action Plan and outcome of a Project on the development of the Ecological Objectives for the Plan, 21-25 November 2005, Riga, Latvia

HELCOM Response Group meeting discusses input to the plan, 30 November – 2 December 2005, Klaipeda, Lithuania

Baltic Sea Action Plan development timeline

the starting point is a common understanding and definition of a sea with a good ecological balance, which will define the needs for further reductions in pollution loads, as well as the extent of human activities. This approach is the best way to ensure a holistic and integrated policy approach,” underlined Brusendorff. “ This also means that we will see changes in HELCOM’s approach concerning how to achieve a healthy Baltic Sea. HELCOM will no longer aim at “one-size-fits-all” solutions, but will seek tailor-made solutions with the responsiveness of the marine environment as the starting point.”

The next crucial step in the development of the Baltic Sea Action Plan, which is expected to be finalised and adopted by HELCOM in November 2007, will be to identify and detail the kind of actions needed to achieve the agreed environmental objectives within a given timeframe for each of the four main environmental priority issues: curbing eutrophication, preventing pollution involving hazardous substances, improving safety of navigation and accident response capacity, and halting habitat destruction and the decline in biodiversity.

The annual Meeting of HELCOM also approved the establishment of an ad hoc Task Force for the development of the Baltic Sea Action Plan. This team consists of representatives nominated by the HELCOM Member States and other interested stakeholders, including representatives of NGOs and the private sector. One of the main objectives of the ad hoc Task Force is to ensure political commitment to the HELCOM Baltic Sea Action Plan, thereby maintaining a link between scientific work and relevant political processes.



Stakeholder Conference on the HELCOM Baltic Sea Action Plan, 7 March 2006, discusses the concept of the plan

27th annual Meeting of HELCOM adopts a set of Ecological Objectives to serve as the core of the action plan

HELCOM Task Force begins to prepare proposals for the plan in April 2006

2006 -2007 Consultations and meetings related to the development of the action plan



Final Stakeholder Conference to review the draft Baltic Sea Action Plan, March 2007

HELCOM to adopt the Baltic Sea Action Plan at a Ministerial Meeting, 15 November 2007, Warsaw, Poland

HELCOM's Meeting also discussed working programmes, intersessional work and ongoing projects, including the GEF/World Bank-funded Baltic Sea Regional Project, as well as the activities of HELCOM Working Groups. The Meeting additionally adopted an updated HELCOM Recommendation 16/8 on "Limitation of Emissions into Atmosphere and Discharges into Water from Incineration of Waste", which now contains new levels for emissions and discharges, including new limit values for dioxins in wastewater.



Vision

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 human economic and sustainable activities

Goals

A Baltic Sea unaffected by eutrophication

Marine life undisturbed by hazardous substances

Favourable status of the Baltic Sea biodiversity

Maritime activities in the Baltic Sea carried out in an environmentally friendly way

Objectives

Concentrations of nutrients close to natural levels

Clear water

Natural level of algal blooms

Natural distribution and occurrence of plants and animals

Natural oxygen levels

Concentrations of hazardous substances close to natural levels

All fish safe to eat

Healthy wildlife

Radiactivity at pre Chernobyl levels

Natural landscapes and seascapes

Thriving and balanced communities of plants and animals

Viable populations of species

No illegal pollution

Safe maritime traffic without accidental pollution

Efficient response capability

Minimum air pollution from ships

No introductions of alien species from ships

Zero discharges from offshore platforms

Vision, strategic goals and objectives of HELCOM's Baltic Sea Action Plan

HELCOM Task Force begins drafting a proposal for the Baltic Sea Action Plan

Following the decisions of the annual Helsinki Commission Meeting in March 2006, the international ad hoc Task Force for the development of the Baltic Sea Action Plan convened its first meeting on 24 April at HELCOM's headquarters in Helsinki, Finland.

The Task Force, chaired by Heike Imhoff, Head of the German Delegation to HELCOM, and consisting of representatives nominated by the HELCOM Member States, the EU, and major regional stakeholder organisations, discussed the outline and structure of the plan, and the activities needed to develop it. Discussions also

focused on possible programmes of action for each of the four main environmental priority areas: eutrophication, hazardous substances, maritime activities and biodiversity.

The next meeting of the Task Force is scheduled to take place on 25-26 October 2006 in Stockholm, Sweden.



Photo: Sergey Vlasov

Helsinki, Finland

EU Environment Commissioner backs HELCOM's action plan



HELCOM's Executive Secretary Anne Christine Brusendorff met the EU Environment Commissioner Stavros Dimas on 4 May in Helsinki to discuss present and future HELCOM actions to protect the Baltic marine environment from all sources of pollution.

Dimas praised HELCOM's work, and particularly welcomed recent efforts to create an innovative strategic action plan to restore the Baltic marine environment. He reiterated the EU's full backing for the action plan, emphasising

that the plan will be instrumental to the implementation of the new EU marine strategy in the Baltic marine region. The Commissioner also stated that it is very important that HELCOM shares its vast and advanced experience in marine environmental protection with other European regional sea commissions, especially the Black Sea Commission, two of whose Member States will soon join the EU.

Brusendorff briefed the EU Environment Commissioner on the latest

progress in the development of the action plan, including the outcomes of the March 2006 Stakeholder Conference, and this year's annual HELCOM Meeting.

HELCOM presents the Baltic Sea Action Plan in the Parliament of Finland on the eve of Finland's EU presidency

HELCOM presented its Baltic Sea Action Plan at the Baltic Sea Day held in the Parliament of Finland on 29 March. The event, which featured an exhibition and various presentations, was organised by the Boating and Sailing Group of the Finnish Parliament, with participants including several leading environmental institutions, as well as private enterprises.

Keynote speakers included the Speaker of the Parliament of Finland Paavo Lipponen, the Executive Secretary of HELCOM Anne Christine



(From left to right) Member of the Parliament of Finland Sirpa Asko-Seljavaara, Speaker of the Parliament of Finland Paavo Lipponen, and HELCOM Executive Secretary Anne Christine Brusendorff



Brusendorff, and the Member of the Finnish Parliament and Chairman of the Boating and Sailing Group, Sirpa Asko-Seljavaara.

HELCOM's stand was visited by the Prime Minister of Finland Matti Vanhanen and many other members of the Finnish Parliament.



HELCOM's action plan highlighted at the Baltic Sea Day in St. Petersburg

The concept of HELCOM's Baltic Sea Action Plan was welcomed by participants in the VII International Environmental Forum "Baltic Sea Day", held on 22-23 March in St. Petersburg, Russia, as a major strategic step towards achieving a healthy marine environment. The presentation of the action plan at this forum formed an integral part of the public consultation

process on the development of the new environmental strategy.

The international Baltic Sea Day traditionally focuses on the ecological status and protection of the Baltic marine environment, and aims to increase awareness of the activities of the Helsinki Commission. The event is actively supported by the Russian

Federation's Ministry of Natural Resources, the regional governments of St. Petersburg and the Leningrad Region, and the other Baltic Sea countries. This year's forum attracted more than 400 of guests, including representatives of governments, scientific and business communities from the Baltic Sea countries, as well as major regional organisations.



St. Petersburg,
Russia



Modelling nutrient reduction scenarios to solve the problem of eutrophication

by Kaj Forsius, HELCOM Professional Secretary

Excessive nitrogen and phosphorus loads originating from land-based sources are the main cause of the eutrophication of the Baltic Sea. Eutrophication is an issue of major concern almost everywhere around the Baltic. Average biomass production has increased by a factor of 2.5, exceptionally intense algal blooms have become more common, and oxygen depletion has considerably worsened, leading to increased internal nutrient loading. Biodiversity and fish stocks have also been seriously affected.

The total annual input of nitrogen entering the Baltic Sea, which is affected by variations in hydrographical and meteorological conditions, varies from about 700 000 to 1 100 000 tonnes (based on data between 1994 and 2003), of which about 25% consists of atmospheric deposition, and about 75% of waterborne inputs. The total annual input of phosphorus entering the Baltic Sea varies from about



Photo: Nanna Rask, Fyn County

20 000 tonnes to about 36 000 tonnes. Phosphorus enters the Baltic Sea mainly as waterborne inputs, and the contribution of atmospheric deposition is only 1-5% of the total. These figures include inputs from natural background sources as well as anthropogenic sources.

Since the 1970's HELCOM has adopted several recommendations to reduce pollution by nutrients in all sectors, including industry, municipal wastewater treatment and agriculture. Since the late 1980s HELCOM has also been working to achieve the 50% reduction targets for nutrient emissions and discharges set in the 1988/1998 Ministerial Declarations.

These targets are now gradually being taken over by a general objective for the sea to reach a good ecological status. The recent decreases in discharges have not been reflected in any improvements in the ecological status of the Baltic Sea as a whole. Therefore there still is a need for further actions.

HELCOM assessments clearly show that agriculture is the main source of the nutrient pollution entering the Baltic Sea. HELCOM's current efforts are therefore mainly focussing on the identification of possible further measures to reduce loads from agri-

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NASA image courtesy Jeff Schmaltz, MODIS Land Rapid Response Team at NASA GSFC





Figure 1. Contemporary levels of water clarity, target values and pre-industrial (pristine) conditions in the Baltic Sea sub-basins in the open sea measured as Secchi depths (in metres).

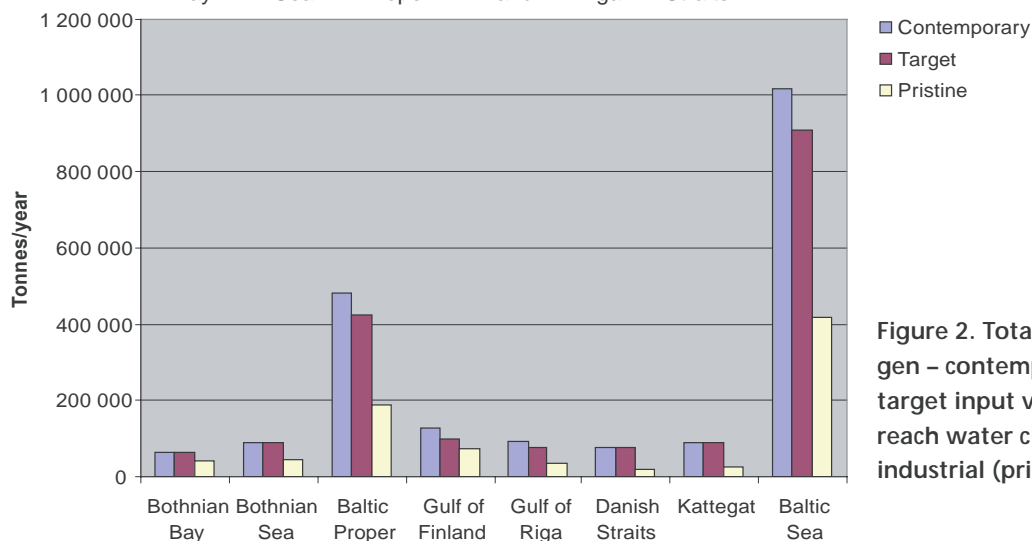


Figure 2. Total inputs of nitrogen – contemporary input levels, target input values needed to reach water clarity targets, pre-industrial (pristine) input levels.

culture in the different parts of the Baltic Sea catchment area.

At the moment HELCOM is working extensively to assess the environmental impacts of various agricultural policies in the Baltic Coastal States. This is done by combining pollution load models with environmental effect models to predict the environmental effects of various agricultural policies. However, other nutrient sources, such as municipalities and airborne nitrogen still contribute significantly to the total inputs, and must also

be considered in scenarios assessing the impacts of measures in different fields.

HELCOM also uses models to estimate the reductions from current nutrient input levels that will be required in order to reach target levels for eutrophication.

By comparing these figures for the necessary reductions with the scenarios for the consequences of different policies in the Contracting Parties, HELCOM will assess whether

planned measures will suffice, or whether further stricter measures will be needed.

HELCOM will also suggest cost-effective solutions designed to reduce nutrient emissions inside and outside the Baltic Sea catchment area.

In the forthcoming HELCOM Baltic Sea Action Plan clear water has been selected as one of the proposed ecological objectives to describe the good ecological status with regard to eutrophication.

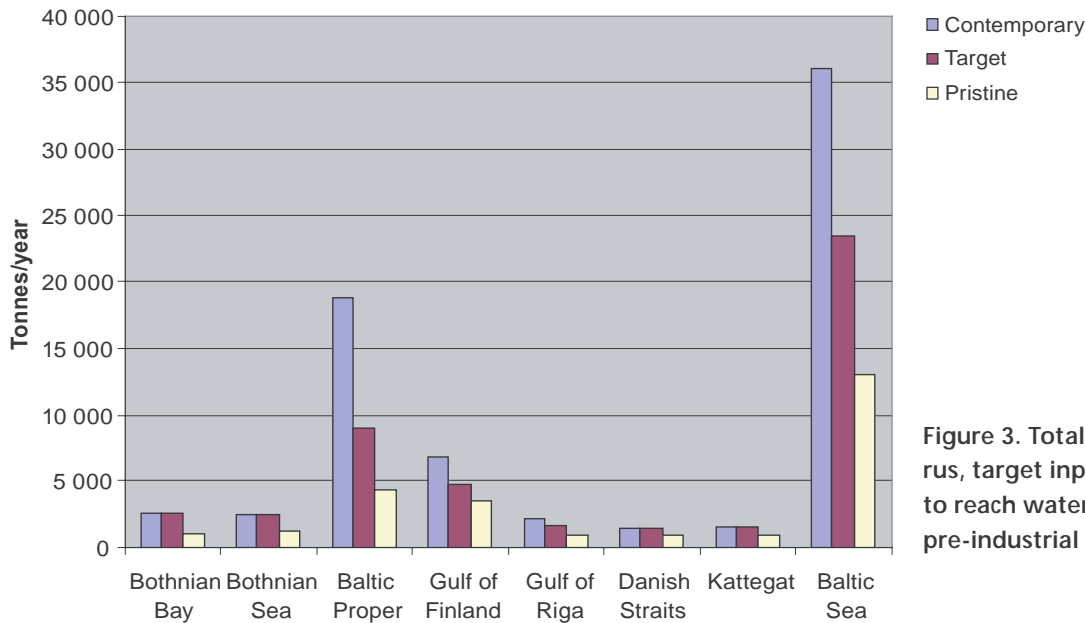


Figure 3. Total inputs of phosphorus, target input values defined to reach water clarity targets, and pre-industrial (pristine) inputs.

Scenario changes of TN & TP in the Baltic Proper

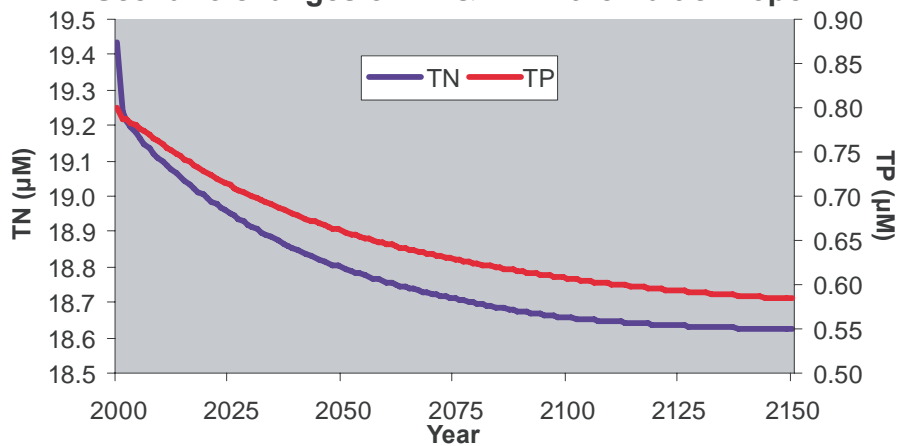


Figure 4. Trends in nitrogen concentration (TN, µmol/l) and phosphorus concentration (TP, µmol/l) in the Baltic Proper if the reductions in total inputs defined in the water clarity scenario are achieved.

Clear water in the open sea was also chosen as a primary ecological objective for the model-based assessment of the effects of policy scenarios. Other aspects of eutrophication, such as coastal eutrophication, were not considered at this point. The coastal zones around the Baltic are much more difficult to assess because impacts will vary greatly according to the proximity of local point sources or river outlets, and water residence times. Most coastal regions are affected by offshore conditions to a great extent, except in very enclosed bays and lagoons.

In order to quantify the reductions in nutrient inputs that will be needed to achieve the objective, the first scenario with initial targets for water clarity in the open sea in different Baltic Sea sub-basins was examined using the MARE NEST model (Figures 1, 2 and 3). The system demonstrates what could be a cost-effective distribution of the measures needed in order to achieve the desired environmental quality in the Baltic Sea. The target values in the model scenario for water clarity are based on tentative results from the development of HELCOM assess-

ment tools for eutrophication. They are approximately based on a 25% deviation from background reference levels for the June-September 'Secchi depth' (a parameter used to determine the clarity of water). The model calculations at this stage are however based on annual averages for water clarity and this should be taken into account when interpreting the results.

The rates of water exchange between the sub-basins of the Baltic Sea are considerable, so changes in the inputs

Continues on the following page

Study indicates that current nitrogen

of nutrients into one sub-basin will also affect adjacent basins. The scenario shows that reductions in the Baltic Proper highly influence the water clarity in other basins. The overall nutrient input reductions needed to reach the targets are 10% and 35% for total nitrogen and phosphorus loads, respectively. The current levels in the MARE model are however based on annual averages for Secchi depth. This means that even more drastic reductions will be needed to reach target levels defined by summertime Secchi depth.

In this scenario no input reductions are needed for the Gulf of Bothnia, the Danish Straits or the Kattegat. A reduction in nutrient concentrations in the Baltic Proper will reduce the inflow of phosphorus into the Bothnian Bay, which is phosphorus limited, and into the Kattegat, which is nitrogen limited.

The model indicates that water clarity target for the Gulf of Finland will not be reached in spite of load reductions of around 2 000 tonnes of phosphorus and 30 000 tonnes of nitrogen from sources around the Gulf of Finland. This shows the importance of the water exchange between the basins.

It must be remembered that there is a considerable time-lag before the effects of any reduction of inputs can be seen in the sea. Figure 4 (on page 15) shows how nutrient concentrations will fall according to the scenario after the input reductions required to reach the water clarity target have occurred. This scenario assumes that current climatic conditions (salinities, temperatures, water stagnations, etc.) will prevail in the future.

A study recently released by HELCOM shows that achieving the nitrogen emission targets set for 2010 by the Gothenburg Protocol to the UN/ECE Convention on Long-range Transboundary Air Pollution (CLRTAP) and the EU Directive on National Emission Ceilings for Certain Atmospheric Pollutants (NEC) may not be enough to reduce airborne nitrogen deposition to the Baltic Sea.

The Gothenburg Protocol and EU NEC Directive are currently the two most important instruments for limiting emissions in Europe.

Atmospheric nitrogen deposition is one of the main contributors to the high

nutrient concentrations that stimulate massive algae blooms in the Baltic. One of the deposition scenarios modelled for HELCOM by EMEP (the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe) clearly indicates that atmospheric nitrogen deposition into the Baltic Sea will be higher in 2010 than in 2003, even if the emission targets in the Protocol and the Directive are achieved. Total nitrogen deposition will amount to 223.1 kilotonnes in 2010 compared to 217.4 kilotonnes in 2003.

According to this scenario, the total estimated nitrogen emission levels from the Baltic Sea countries in 2010 will increase by approximately 4%

Photo: Irina Gasilina



emission targets are insufficient

compared to 2003. Emissions from ships are meanwhile expected to increase by 20%, although the importance of the ship emissions for the development of the total deposition will not be as significant compared to the foreseen development in some of the coastal countries.

Approximately one quarter of the total nitrogen input into the Baltic Sea comes from airborne nitrogen deposited directly into the sea. In addition to this direct deposition, some of the nitrogen deposited into the Baltic Sea catchment area reaches the sea via runoff from land. Sources outside the Baltic Sea catchment area account for almost 40% of the total airborne

deposition of nitrogen, and this should be considered when evaluating possible further developments and the adequacy of measures taken to reduce airborne nitrogen pollution.

Nitrogen compounds are emitted into the atmosphere as nitrogen oxides and ammonia. Shipping, road transportation, and energy combustion are the main sources of nitrogen oxide emissions around the Baltic. In the case of ammonia, roughly 90% of emissions originate from agriculture. Agriculture is the most significant contributor of total airborne nitrogen, accounting for more than 40% of total air emissions of nitrogen from the HELCOM countries.



Photo: Irina Gasilina



Although reductions in nitrogen oxide emissions were achieved by 2003, the emission ceilings of the Gothenburg Protocol to the UN/ECE CLRTAP and the EU NEC Directive for 2010 may be difficult to achieve for some of the HELCOM countries.

The results of this study will contribute to the updating of programmes under the NEC Directive in EU Member States in 2006, and proposals for the possible modification of the NEC Directive in 2008, as well as the revision of the Gothenburg Protocol.

Biodiversity objectives for the Baltic Sea Action Plan

by **Juha-Markku Leppänen**,
HELCOM Professional Secretary

Levels of biodiversity determine the resilience of an ecosystem to changing conditions. It is more difficult for ecosystems with low species diversity and species with low genetic diversity to adapt to changing conditions. Functional diversity is also important for maintaining healthy ecosystems, and ecosystem functions are reduced by habitat degradation and species loss.

Poorly functioning ecosystems are more vulnerable to the effects of natural variability and random events. This can make them less able to react to cope with such processes as climate change. Biodiversity thus reflects a crucial aspect of the health of an ecosystem. A diverse and well functioning marine ecosystem is also necessary to maintain ecosystem goods and services that are important to man.

The marine and coastal ecosystems in the Baltic Sea are threatened by many human activities. Anthropogenic eutrophication has not only changed water quality, but also the composition of littoral, planktic and benthic life. Mass algal blooms, enhanced by eutrophication and often formed by a single species, are extreme expressions of a loss of biodiversity. Hazardous substances have widely accumulated in the biota, especially threatening top predators. Some species are directly threatened by biomass extraction e.g. due to over-fishing. The overexploitation of one species can have a cascading effect on the whole ecosystem.

Many species suffer from the destruction of habitats due to coastal developments, gravel extraction, dredging and bottom-trawling. The likelihood of a serious oil spill with all its associated environmental hazards is continuously rising as shipping intensifies. Meanwhile, increased maritime

traffic from other parts of the world has resulted in the introduction of many non-native species. Together with potential global warming, these invaders might play an increasingly important role in the future of the Baltic Sea's delicate ecosystems, and interfere significantly with their functioning.

The strategic goal relating to the protection of nature and biodiversity under the Baltic Sea Action Plan is the "favourable conservation status of Baltic Sea biodiversity". The related Ecological Objectives are divided into diversity at the landscape/seascape level, the community level and the species level, reflecting the distinctions drawn in the UN Convention on Biological Diversity, which focuses on biodiversity at different levels "within species", "between species" and "of ecosystems".

One of the biodiversity objectives is to maintain **natural landscapes and seascapes**. This means safeguarding a diversity of coastal and marine landscapes and their associated ecosystems and cultural values. The Baltic Sea Protected Areas (BSPA) network has been set up to preserve different ecosystems and landscapes, as well as the breeding and feeding grounds of endangered species. The implementation status and ecological coherence of this network can be used as indicators of the level of protection afforded to coastal and marine landscapes.

Thriving and balanced communities of plants and animals are essential for the balanced ecosystem functions needed to enable the biodiversity of the Baltic Sea to reach a favourable conservation status. Changes in any elements of com-





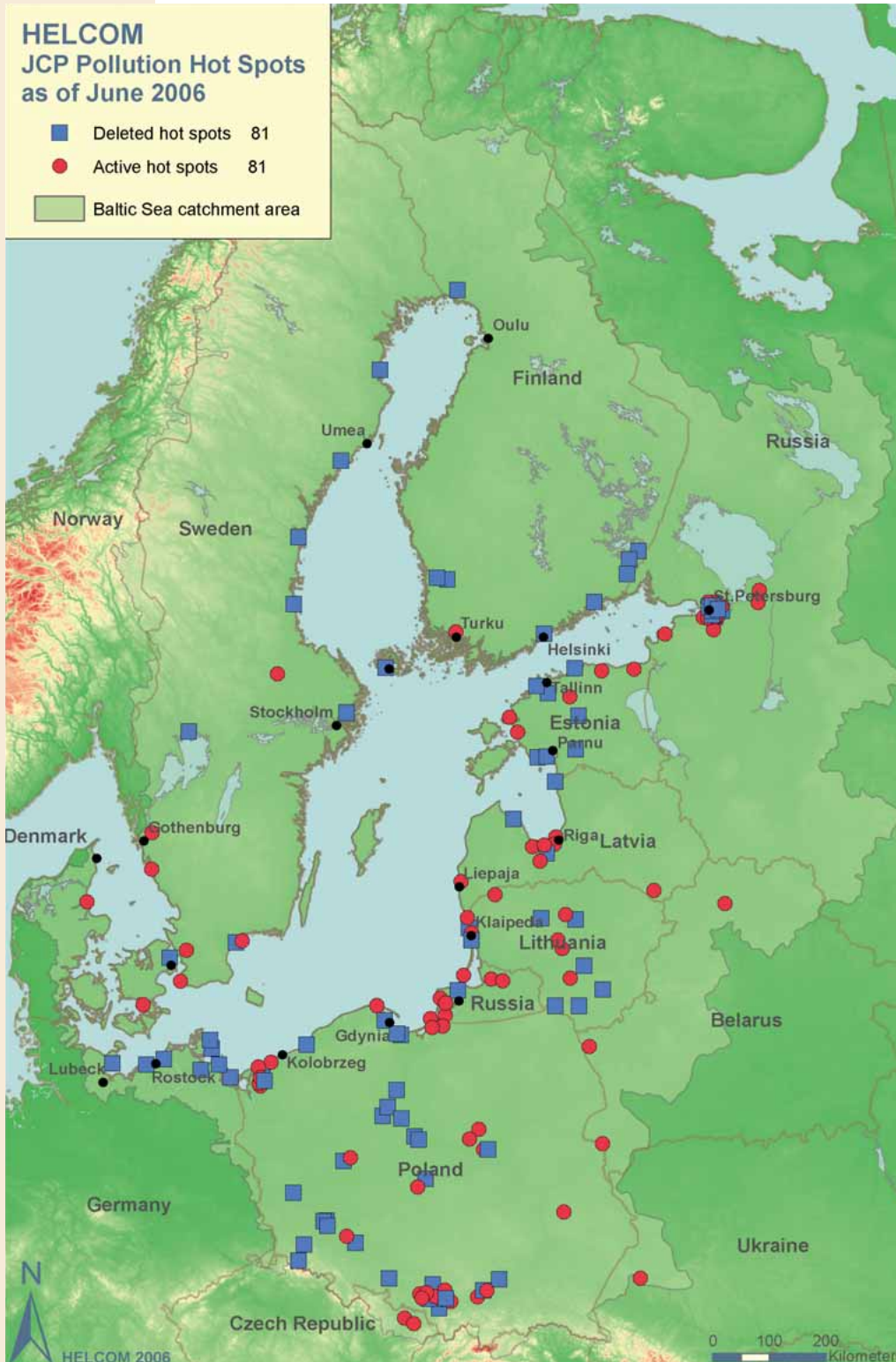
munities can have knock on effects on associated species and the overall ecological functioning of the whole ecosystem. For example, changes in plankton communities can have effects on entire food chains, and eutrophication-fuelled algal blooms also affect other pelagic and benthic communities. Many communities include key species or habitat building species, such as bladder wrack (*Fucus vesiculosus*) or eelgrass (*Zostera marina*) that can be used as indicators of their associated communities.

Both natural ecosystems and balanced communities rely on **viable populations of species**. A viable

population consists of a successfully breeding, healthy population that is able to maintain itself and perform its functional role in its community and ecosystem. The population trends of certain species, such as seals, white-tailed eagles, salmon and cod are well known due to long-term studies, and can be used as indicators of the health of wildlife as a whole. HELCOM has also produced a red list of fish and lamprey species, as well as a list of species in need of immediate protection, and these lists can be used to define the need for urgent actions.

Further work on tools to evaluate changes in biodiversity is essential, especially in relation to the structure of ecological communities. Further indicators must also be devised to assess and monitor progress towards HELCOM's biodiversity objectives.

HELCOM halves the number of Baltic pollution hot spots



The Heads of Delegation to the Helsinki Commission, meeting in Lithuania's capital, Vilnius, on 21-22 June, approved the removal of several designated hot spots from the list of the Baltic Sea's most significant pollution sources, following an extensive review of clean up efforts.

Among the deleted hot spots are several industrial plants and municipalities in Estonia, Lithuania, Poland and Russia, which have made vast improvements in updating of their processes and/or pollution abatement technologies.

"This is a very welcome development, confirming the strong commitment of the HELCOM Member States to eliminate all hot spots in the Baltic Sea catchment area," said Arturas Daubaras, who served as Chairman of the Helsinki Commission until the end of June 2006. "The remedial actions at the hot spots should be seen collectively as a major step towards achieving a cleaner marine environment. These ongoing activities are also going to be part of the HELCOM Baltic Sea Action Plan."

The deleted hot spots include:

- 8 municipal wastewater treatment plant sub-hot spots in St. Petersburg
- 3 municipalities in Estonia – the capital Tallinn, Pärnu and Paide
- 1 coking plant at "Pryjazn" in Katowice, Poland
- the Duo-Stal metallurgical plant in Bytom, Poland, which has now been closed
- 2 municipalities in Lithuania, Klaipeda and Siauliai
- 3 industrial hot spots along the Lithuanian coast: the "Amalg Azotaz" fertiliser plant, the Panezys foodstuffs plant, and the Klaipeda cardboard factory.

“ We are witnessing very good progress in the reduction of pollution from point sources such as municipal wastewater treatment facilities, as well as industrial plants,” said Kaj Forsius, Professional Secretary of HELCOM. “ Wastewater treatment efficiency at the former hot spots now meets the requirements of the relevant HELCOM Recommendations.”

The Hot Spots list of the most significant point sources of pollution around the Baltic Sea was first drawn up under the HELCOM Baltic Sea Joint Comprehensive Environmental Action Programme (JCP) in 1992. The objective of the JCP is to facilitate the implementation of pollution reduction



measures at the most polluted sites in the Baltic Sea catchment area. The programme, which should be completed by 2012 at the latest, specifies a series of actions to be undertaken at pollution hot spots. The most notorious hot spots are point sources such as municipal facilities and industrial plants, but the programme also covers pollution from agricultural areas and rural settlements, and sensitive areas such as coastal lagoons and wetlands where special environmental measures are needed. Certain hot spots have been split into sub-hot spots in order

to facilitate their management and actions to reduce pollution.

The Hot Spots were designated in 1992 by an international group of scientists, engineers, environmental managers, bankers and national representatives, according to practical economic considerations as well as the seriousness of their impact on the environment and human health. A total of 81 hot spots and sub-hot spots remain on the list today, following the deletion of 81 of the identified 162 hot spots/sub-hot spots. Investment and remediation projects carried out at pollution hot

spots around the Baltic Sea have contributed substantially towards overall pollution load reductions in the Baltic Sea catchment area.

Water quality in many coastal waters of the Baltic Sea has improved considerably since 1992, reflecting progress in the treatment of municipal and industrial wastewater. But although significant progress has been made at municipal and industrial hot spots, continued and substantial additional support will be required to reach the targets of the programme.

Serious oxygen depletion discovered in the Baltic Proper and the Gulf of Finland

by Juha Flinkman, Harri Kankaanpää, Riku Lumiaro and Maria Hällfors (FIMR)

The oxygen situation has worsened in waters near the bottom of the Baltic Proper, and concentrations in near-bottom waters in the Gulf of Finland are the worst ever recorded during 44 years of surveys by the Finnish Institute of Marine Research. In the Archipelago Sea, the oxygen situation remains good even on the deep sea beds, although in the open sea oxygen immediately runs out at a depth of approx. 60 metres.

The situation on the bottom of the Gulf of Bothnia is as good as usual. Blue-green algal blooms have already faded in the northern Baltic Sea, although upwellings have led to increased blooming in some parts of the Gulf of Finland in August.

The research vessel Aranda returned to Helsinki on 28 August from a month-long expedition surveying the Gulf of Finland, the Archipelago Sea, the Gulf of Riga Bay, The Åland Sea, the Gulf of Bothnia and the Baltic Proper. Aranda's tasks also included research related to historical sediments and zooplankton.

During the last few months the state of the Baltic Proper has deteriorated. Water layers are oxygen-free or seriously oxygen-depleted starting at a depth of about 60 to 70 metres, and deeper waters and sea bottoms are completely lifeless. In some places, hydrogen sulphide – a substance toxic to all life – can be found at depths of 60 metres. The upper boundary of this oxygen-free water layer has risen ever higher in the main basin of the Baltic Sea, reducing the living space of zooplankton. Many species prefer the saltier waters near the bottom of the sea, but the lack

of oxygen has forced them to rise ever closer to the surface, where other conditions are less favourable. This in turn has consequences for fish species feeding on zooplankton, such as Baltic herring and sprat. The living conditions of bottom-dwelling fauna have also deteriorated significantly.

There were few widespread or intense blue-green algal blooms in the Baltic Proper this summer, as had been predicted in the spring algal forecast. More to the north, local intense blooms containing high concentrations of liver toxins were found, e.g. in the southern Archipelago Sea. In other respects the phytoplankton species composition of samples was as expected for this time of year. Water turbidity was better than expected for the season.

Oxygen runs out at a depth of about 50 to 60 metres in the Gulf of Finland. At greater depths, water layers and sea bottoms are either oxygen-free or suffer from severe depletion. In some places, hydrogen sulphide was found at a depth of just 50 metres. The situation on the bed of the Gulf of Finland has never been as poor as this since such surveys were started in 1962.

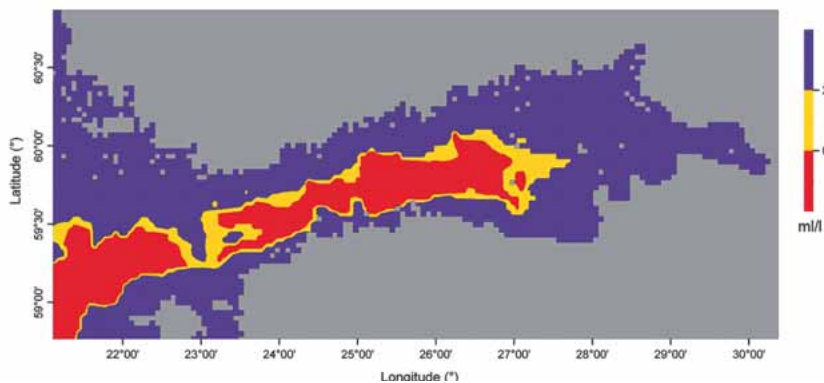


Photo: Juha Flinkman

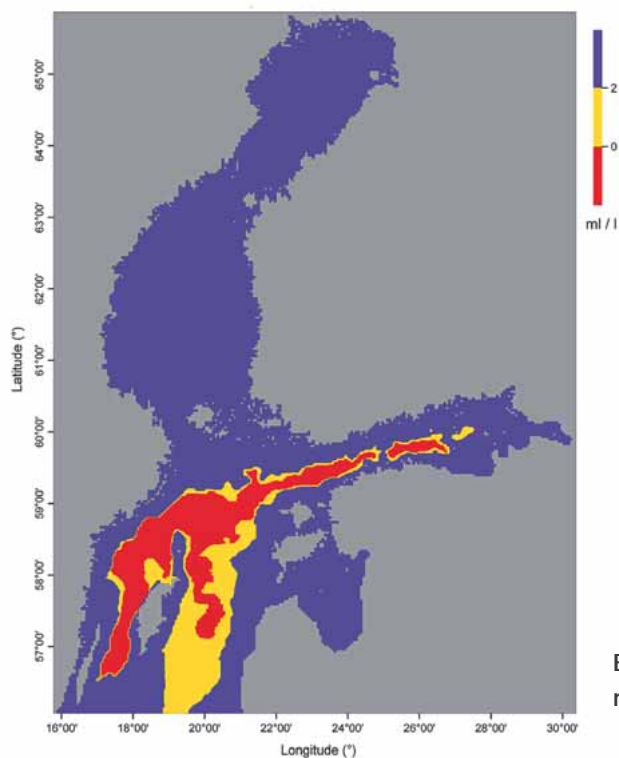
Lifting a wave buoy



Photo: Nanna Rask, Fyn County



Gulf of Finland oxygen map August 2006. The red areas show where hydrogen sulphide was present, and the yellow areas show other oxygen-free parts of the sea bottom.



Baltic Sea oxygen map August 2006



Photo: Sergey Vlasov

Research vessel Aranda

In oxygen free conditions bottom sediments release phosphorus, further accelerating the eutrophication of the Baltic Sea. Upwellings transport the released phosphorus, where it can be absorbed as a nutrient by algae. Near the mouth of the Gulf of Finland, cold, nutrient-rich water that had welled up to the surface from the sea bottom was observed, but later blue-green algal blooms increased again due to warm and calm weather.

Relatively abundant blue-green algal blooms were observed in the Åland

Sea, although the algae were already dying. Signs of waning blue-green algal blooms were also noted in the southern Bothnian Sea. Elsewhere in the Gulf of Bothnia the concentrations of phytoplankton were low, and the water was very clear. The oxygen situation near the bed of the Bothnian Bay was as good as usual.

No oxygen-free sea bottom areas were found in the Archipelago Sea. Even the deeper observation stations at the southern end of Kihti had oxygen right down to the sea bottom. In the open

sea, however, the oxygen-free layer started at a depth of 60 metres. There was plenty of phytoplankton in the Archipelago Sea, significantly more than in more open waters, and the fishhook waterflea was abundant.

The process of eutrophication is continuing in the Baltic Sea, and the oxygen-free layer in the Baltic Proper and the Gulf of Finland is expanding and rising towards the surface. The sea bottom in the Gulf of Finland may still become oxygenated before the ice season begins but this depends on the wind and storm conditions this autumn and early winter. Early in 2005, for instance, two intense storms in close succession mixed the entire Gulf of Finland water column from the surface to sea bottom. This oxygenated near-bottom water layers, the phosphorus dissolved in the near-bottom water was transported to the surface, to be consumed by algae.

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Water transparency no longer declining in some parts of the Baltic Sea

Water transparency levels have stopped decreasing and appear to have stabilized in some sub-basins of the Baltic marine area, according to a new assessment by the Helsinki Commission.

In the Kattegat, the Southern and Eastern Baltic Proper, the Bothnian Sea and the Bothnian Bay the declining trend in water transparency has ceased over the recent 10 to 15 years,

and the Gulf of Finland the increasing intensity of cyanobacterial blooms. Intensified cyanobacteria blooms are an indicator of increased nutrient concentrations and low phosphorus to nitrogen ratios. This makes them an obvious symptom of the ongoing eutrophication of the Baltic Sea.

Reductions in water transparency over the past century have been less dramatic in the Bothnian Bay, where visibility has declined from 8m to 6m. In the Southern Baltic Proper and the Kattegat changes in water transparency have not been as dramatic as in more northerly waters. The Kattegat is a transitional region between the highly saline North Sea and the brackish water Baltic Sea, which may explain this discrepancy.



The primary cause of reduced water transparency during the summer (June-September) is most likely the increase in phytoplankton biomass, and especially in the Baltic Proper

with transparency levels subsequently remaining at about the same level or in some cases even slightly improving. Underwater visibility is today only declining still in the Gulf of Finland and the Northern Baltic Proper.

Assessments indicate that overall water transparency has decreased considerably in all sub-basins of the Baltic Sea over the last century. The trend shows a steady linear decline ever since measurements were started in 1903.



Climate change scenarios for the Baltic Sea region



Leading scientists, politicians, journalists and interested stakeholders from the Baltic Sea countries took part in the First International Conference on the Assessment of Climate Change for the Baltic Sea Basin on 22-23 May 2006 in Gothenburg, Sweden. The conference, organised by the University of Gothenburg, BALTEX and HELCOM, presented an assessment of ongoing and possible future climate variations in the Baltic Sea basin.



Temperature changes observed in the past have been associated with consistent changes in terrestrial ecosystems, such as earlier spring phenological phases, northward species shifts and increased growth of vegetation. These trends are expected to continue into the future, although the induced shifts in species' distributions may be slower than the warming which causes them.

Scenarios for the climate in the late 21st century describe an ongoing general warming, increased winter precipitation almost everywhere, and dryer summers in southern areas. For the water body of the Baltic Sea, a tendency towards lower salinity could be expected, which would have

future climate change. One unique feature of BACC is the way it combines different kinds of evidence of climate change in terms of impacts on marine, freshwater and terrestrial ecosystems throughout the Baltic Sea drainage basin. The project represents the first systematic scientific attempts to assess climate change in a European region. More than 80 scientists from 12 countries have contributed on a voluntary basis. Consequently the results have not been influenced by either political or special interests.

The BACC Project is a joint venture set up by the BALTEX (Baltic Sea Experiment) Programme and HELCOM as an example of a dialogue

The climate in the Baltic Sea basin has changed during the past century, and current research shows that the area will most likely continue to get warmer. In the past century there has been a marked increase in average temperatures of more than 0.7°C, with consequences such as shorter ice seasons. This rise is larger than the corresponding global mean temperature increase of 0.5°C. No clear direct link to anthropogenic warming and the increased levels of greenhouse gases on regional scales has been established, although it is plausible that at least part of the recent warming in the Baltic Sea basin is related to the steadily increasing atmospheric concentrations of greenhouse gases.

“Continuing analysis is needed to clarify the causes behind the increasing temperature,” said Anders Omstedt, professor in Geosphere Dynamics at Gothenburg University.



major impacts on marine fauna in the Baltic. The expected changes in precipitation (and the consequent river runoff) may exacerbate eutrophication. The general warming can be expected to lead to even earlier spring phenological phases, northward species shifts and more prolific vegetation growth.

The assessment has been produced as part of the recently established Assessment of Climate Change for the Baltic Sea Basin Project (BACC Project). It incorporates knowledge of historical, current and expected



between the scientific community and environmental policy makers. BALTEX is a continental-scale experiment within the Global Energy and Water Cycle Experiment (GEWEX) and the World Climate Research Program (WCRP).

For more details of the BACC Project, visit <http://www.gkss.de/bacc>.

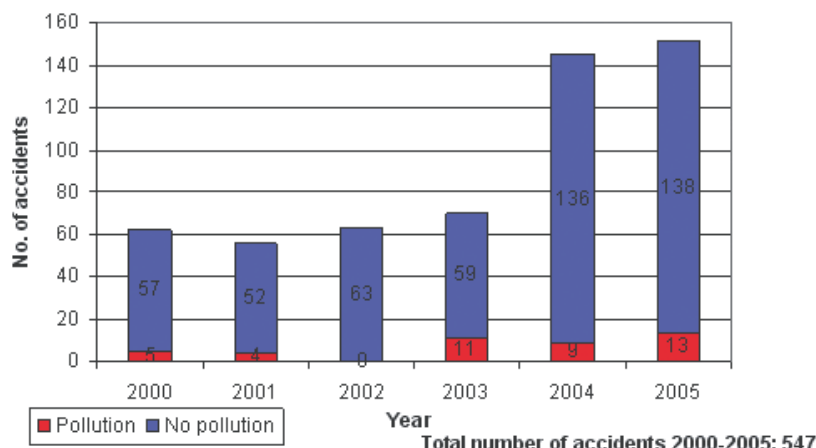
Significant increase in shipping accidents in the Baltic

The number of shipping accidents annually in the Baltic Sea marine area has more than doubled since the beginning of the 21st century, according to the latest HELCOM study. Analysis of the data contained in the latest annual reports provided by the Baltic Sea countries to HELCOM reveals that there were 151 accidents in 2005, 145 in 2004, compared to about 60-70 per year during the period 2000-2003. In 2005, 13 accidents resulted in small-scale pollution, compared to 9 similar cases in the previous year.

The study shows that collisions (38%), groundings (36%), technical failures (8%), and fires/explosions (5%) were the most common types of accidents recorded in 2005. The share of groundings has decreased (from 41% in 2004), while the share of collisions has increased (from 27% in 2004). Collisions involving two ships accounted for 60% of all collision cases in 2005 and the rest of cases were collisions with fixed or floating structures such as piers, navigation signs etc.

Fortunately, most of the accidents in the Baltic do not cause notable pollution, but even one large-scale accident would seriously threaten the marine environment. Over the period 2000-2005, an average of 8-9% of all reported accidents resulted in some kind of pollution. Two of the five most serious accidents in the Baltic marine area have occurred since 2001 – involving “Baltic Carrier” in 2001 (2 700 tonnes of oil spilt), and “Fu Shan Hai” in 2003 (1 200 tonnes of oil spilt).

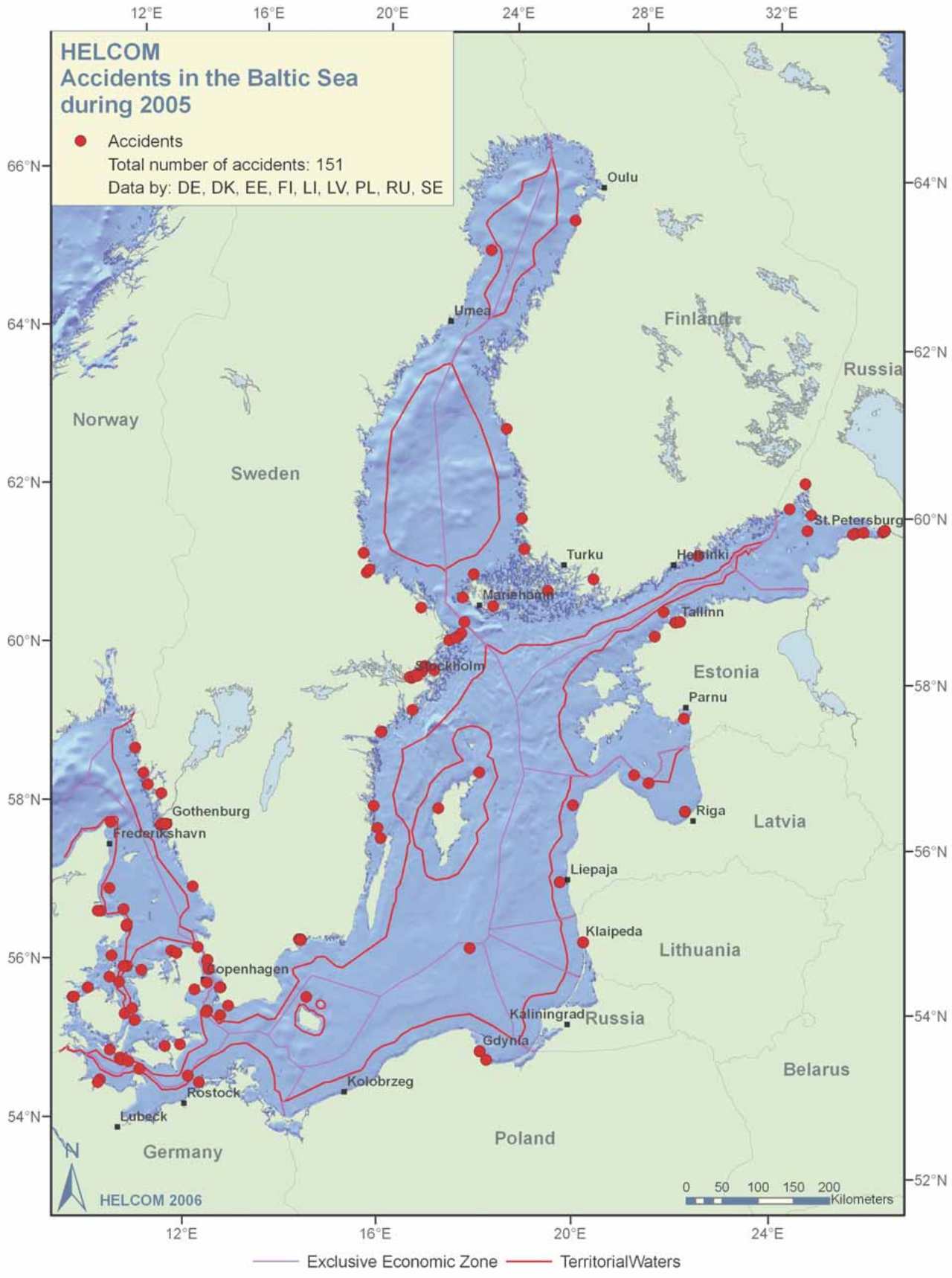
Number of shipping accidents in the Baltic Sea 2000-2005



“We are experiencing a significant increase in the number of shipping accidents in the Baltic area. It’s a worrisome trend,” said Anne Christine Brusendorff, Executive Secretary of HELCOM. “One possible explanation is that the apparent increase is a result of the new reporting requirements for shipping accidents recently established by HELCOM. Previously not all accidents were reported, but the new system ensures that we now get more complete data. But it’s clear that the rapidly growing maritime traffic in the region could also have contributed to this increase in the number of accidents.”

Cargo vessels (60%), tankers (15%) and passenger ferries (12%) were the main types of vessels involved in accidents. The main reason for accidents was human error (42%), followed by technical factors (23%).

According to the HELCOM Automatic Identification System (AIS) for monitoring maritime traffic, each year around 50 000 ships ply the waters of the Baltic Sea. Although growing traffic is a positive sign of intensified co-operation in the Baltic Sea region and a prospering economy, it also makes potentially polluting shipping accidents more likely.



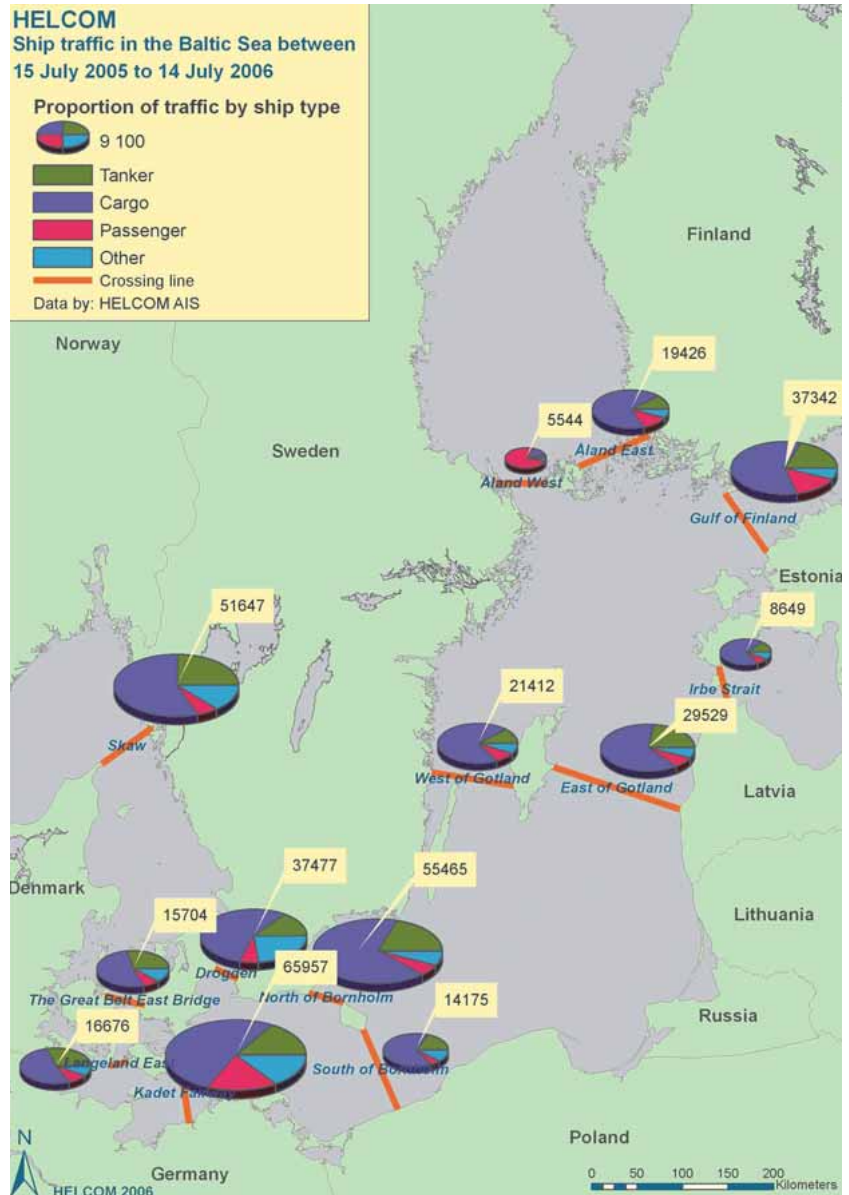
Latest statistics on shipping traffic in the Baltic Sea

More than 51 000 vessels annually pass the Skaw at the northernmost tip of Denmark on their way into or out of the Baltic, according to the latest statistics provided by the new HELCOM Automatic Identification System (AIS) for monitoring maritime traffic in the Baltic Sea area.

"The HELCOM AIS system, which was officially launched on 1 July 2005, is now providing for the first time ever an up-to-date and comprehensive overview of the shipping traffic situation in the Baltic," said Anne Christine Brusendorff, HELCOM Executive Secretary.

During the twelve months up to July 2006, around 51 600 ships entered or left the Baltic via the Skaw; about 51 000 passed the Swedish island of Gotland; and more than 37 000 entered or left the Gulf of Finland.

Approximately 60-70% of these ships were cargo vessels, and 17-25% were tankers. There are about 1 800 - 2 000 ships in the Baltic marine area at any given moment. Vessels with a



draught of less than 7 meters account for most of the ships entering or leaving the Baltic via the Skaw.

The reporting lines of the HELCOM AIS used to show the spatial distribution of shipping activities can be seen on the map above.

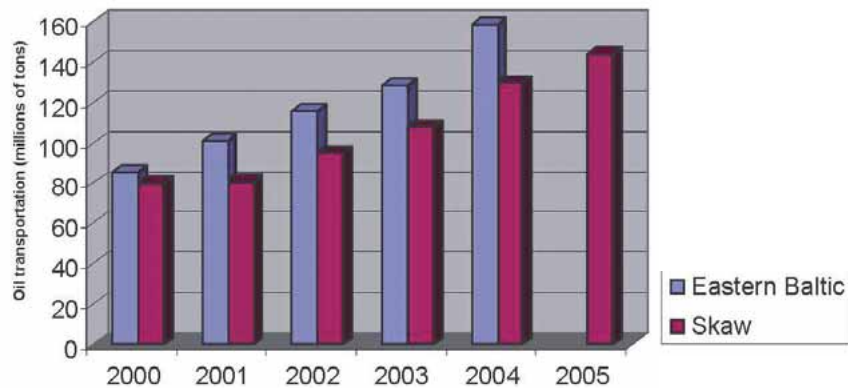
The HELCOM AIS system enables the identification of the name, position, course, speed, draught and cargo of every ship of more than 300 gross

tonnes sailing in the Baltic Sea. The system displays all the available data over a common background map of the region.

The AIS data indicates that both the numbers and sizes of ships (especially oil tankers) have been growing, and that ships carrying up to 150 thousand tonnes of oil are now sailing the waters of the Baltic. The amounts of oil transported on the Baltic have also increased significantly since 2000.

Oil transportation in the Baltic

Amounts of oil transported via the 11 largest oil terminals in the East Baltic (Gdansk, Klaipeda, Ventspils, Muuga, Primorsk, Porvoo, Naantali, Riga, Butinge, St. Petersburg and Kaliningrad) and past the Skaw (in millions of tonnes)



The system covers Norwegian waters as well as the whole of the Baltic Sea. This greatly improves risk assessments and management, and also facilitates decisions on new measures to prevent collisions and improve navigational safety in the Baltic.

The system includes land-based stations established in all the coastal countries to receive information from all vessels passing through their national waters. All stations are linked to a special "HELCOM server", which combines all the data and provides a comprehensive real-time picture of the overall maritime traffic situation in the Baltic Sea to the competent authorities in each HELCOM member state. The server updates ships' positions every six minutes.

In addition to providing shore stations with information, the AIS also enables ships to detect and identify each other at sea. AIS messages contain information on the identity, position and course of the vessel, as well as various additional data.

The primary task of the shore-based AIS network is to provide the competent authorities with a monitoring tool for supervision, risk analyses, search and rescue (SAR) operations, port state control, security and other safety-related tasks to ensure safe



navigation in the crowded waters of the Baltic Sea.

The decision to establish a land-based monitoring system for ships, based on AIS signals, was agreed during the HELCOM Extraordinary Ministerial Meeting in Copenhagen in 2001, which closely followed one of the most serious oil spills

in the Baltic in recent years. On 29 March 2001, close to the sea border between Germany and Denmark, the double-hulled oil tanker "Baltic Carrier" collided with the bulk carrier "Tern", resulting in the spillage of 2 700 tonnes of heavy fuel oil, much of which eventually washed up along the Danish coast.

The new system builds upon the International Maritime Organisation's (IMO) requirements for all larger ships to be equipped with AIS. HELCOM's work will also contribute at European level to the implementation of the EU directive on traffic monitoring and information, under which AIS exchange systems should be operational by the end of 2008.

HELCOM fleet drills response to massive oil spill off Gdynia

A fleet of oil-combating ships from the Baltic Sea countries working together under HELCOM's flag tested its capabilities to deal with a massive oil spill during the Helsinki Commission's annual international pollution response exercise BALEX DELTA, held off Gdynia, Poland, on 6 September.

This year up to 23 ships and smaller vessels, and three airplanes, from Denmark, Finland, Germany, Lithuania, Poland, Russia and Sweden took part in HELCOM's operational exercise to check the Baltic Sea countries' readiness to jointly respond to major oil accidents at sea.

The Gdynia exercise was the first time the European Union (which is also a HELCOM Contracting Party) has participated in BALEX DELTA. The EU was



represented by two vessels chartered by the European Maritime Safety Agency.

"The exercise was successful," said Thomas Fagö, Chairman of the HELCOM Response Group. "All the task forces displayed exceptional performance working under a single command. The results of the exercise show our growing capability to jointly and effectively deal with major oil spill accidents in the Baltic Sea region."

BALEX DELTA 2006 was organized by the Polish Maritime Search and Rescue Service.

The exercise involved a scenario where a general cargo vessel collided with an oil tanker carrying a cargo of around 30 000 tonnes of light crude oil in this part of the Gulf of Gdansk. Besides its cargo, the oil tanker also had some 1 200 tonnes of heavy fuel oil and 120 tonnes of marine diesel oil as bunker. After the collision the oil tanker had supposedly leaked around 6 000 – 8 000 tonnes of oil cargo, which was assumed to be drifting towards the Polish and Russian coastlines. Units from HELCOM countries were tasked to jointly prevent the oil slick from coming ashore.

This year the discharged oil was no longer simulated using popcorn, but with expanded perlite, a mineral substance several times lighter than water, which is white in colour and easily visible on the water surface. Expanded perlite is absolutely harmless to the environment. Perlite is a naturally occurring glassy volcanic rock found in many parts of the world. It can be heated to a high temperature to produce a lightweight, micro-porous material with a high surface area. The idea of using this material to simulate oil spills has been developed by the Chemical Faculty of the Gdansk University of Technology and the Polish Maritime Search and Rescue Service.

BALEX DELTA operational response exercises have been held annually since 1989. Throughout this time HELCOM has steadily improved the readiness of the countries around the Baltic to jointly respond to oil spills at sea. The Baltic coastal countries now have a total of more than 30 response vessels located around the region. These vessels are able to reach any place in the Baltic Sea within 6 to 48 hours of notification of an accident.

Finnish Navy rowing team wins HELCOM Trophy

The Finnish Navy team from the oil response vessel Hylje won the HELCOM Trophy at the Helsinki Commission's 11th annual rowing competition, held on 7 September in Gdynia, Poland, following the BALEX DELTA 2006 pollution response exercise.

Eight teams representing oil spill response vessels from Denmark, Finland, Germany, Lithuania, Poland, Russia, Sweden, and the European Maritime Safety Agency, took part in this year's race.



Finnish vessel Hylje



Winners of the HELCOM Trophy rowing competition:

- | | |
|----------------------------|--------------------------------|
| 2006 (Gdynia) – Finland | 2000 (St. Petersburg) – Sweden |
| 2005 (Karlskrona) – Sweden | 1998 (Gdynia) – Finland |
| 2004 (Warnemünde) – Sweden | 1996 (Karlskrona) – Poland |
| 2003 (Helsinki) – Sweden | 1991 (Rönne) – Sweden |
| 2002 (Liepaja) – Lithuania | 1990 (Gdynia) – Sweden |
| 2001 (Rönne) – Lithuania | |

The teams were divided into three groups. The Danish, Finnish and Polish teams finished first in their heats, and qualified for the final. The final race opened with an amazing spurt from the Finnish crew, whose boat took a winning lead right from the start, leaving all their competitors far behind. The Danish crew was the second to cross the line, followed by the Polish team only a second later.

Eleven HELCOM rowing competitions have been held since 1990. The race has been won six times by Swedish teams, twice each by Finnish and Lithuanian teams, and once by a Polish team.



HELCOM's new mariners' routing guide for the Baltic Sea

The HELCOM Transit Guide for the Baltic Sea is the first publication of its kind in the region. It is a single source of essential navigational information for ship masters planning safe routes through the Baltic.

The Guide is designed to supplement the existing nautical chart portfolio for the Baltic Sea. It includes information on reporting systems, ice conditions, maritime assistance services, special regulations, water levels and locally significant land uplift.

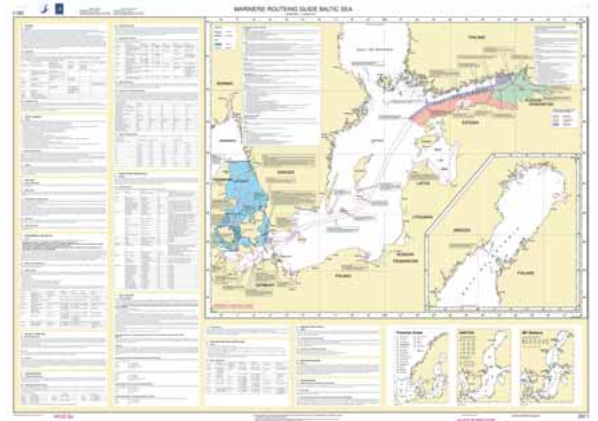
The Guide was developed within the last year by the HELCOM Transit Route Expert Working Group, using a chart designed and printed by the German Federal Maritime and Hydrographic Agency (BSH). Germany has also offered to keep the guide up to date.

"The initial idea of this project was to provide mariners with an easy-to-use guide which allows users to instantly access the necessary information, and we can be proud of the result," said Hans-Heinrich Callsen Bracker, Chair-

man of the HELCOM Transit Route Expert Working Group. "Maintaining the printed version and developing and continually improving the web version of the Guide will be our next challenge."

Denmark will lead the development of an advanced online version of the Guide.

To order your copy of the Guide, visit the BSH web site at: <http://www.bsh.de/en/Products/Charts/Routeing%20Guides/index.jsp>.



A new HELCOM system to help identify suspects of illegal discharges

At the HELCOM Response Group Meeting, held on 13 - 15 September in Gdynia, Poland, representatives of the Baltic Sea countries shared their first experiences in using the HELCOM STW/AIS system, which integrates data from the Seatrack Web (STW) oil drift forecasting system and the Automatic Identification System (AIS) for monitoring maritime traffic. The aim of this new system is to provide additional tools for identifying ships that illegally discharge oil into the Baltic Sea. Up until now, only a few of the ships that

illegally discharge oil into the sea could be identified. But by combining data on ships' routes from the AIS with reversed calculations of the pathways

of oil slicks based on the Seatrack Web system, identification procedures can now be significantly improved, providing better evidence for the courts.



Gdynia, Poland

Catches of chemical munitions in the Baltic remain low

For the second year in a row, Baltic fishermen have reported a record low number of incidents of dumped WWII chemical munitions being caught in their nets. According to the latest annual statistics, recently submitted by Denmark to HELCOM, there were only four small-scale catches in 2005, the same number as in 2004, compared to 25 incidents reported in 2003.

This is the lowest figure for annual catches since 1999. However, experts are not yet attributing the decrease to any specific factors. The reason for the dramatic decrease is unknown, as was the case for the dramatic increase in 2003. The variations are probably due to a combination of different factors, such as the intensity of fishing activities in the areas close to the dumped chemical munitions, and the recommendations issued by HELCOM and local authorities.

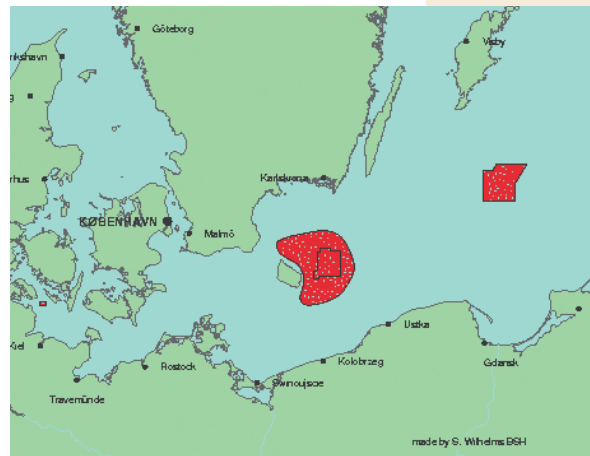
As Lead Country for monitoring dumped chemical munitions, Denmark prepared the latest annual report based on information received as of 31 August 2006. All the catches occurred east of Bornholm, near an area where large amounts of chemical munitions were dumped after World War II. Most of the netted chemical munitions caught in 2005 were completely corroded, and all four consisted of lumps of mustard gas, with a total weight of approximately 105 kg. All catches were released at sea. The total weight of the chemical munitions caught in 2005 was slightly lower than in 2004 – when three separate incidents involved mustard gas, with a total weight of approximately 140 kg netted in clay-like lumps, and another episode involved a 20 kg lump of sneeze gas caught by a fishing vessel. Most of the catches

were released by fishermen at sea, although one catch was brought ashore for safe disposal.

The year 2003, when a total of 1 110 kg of gas-derived lumps was netted in 25 incidents represented one of the biggest increases in both the numbers of incidents and the total weight of the chemical munitions caught in the Baltic Sea since the mid-1990s. Over the period 1995-2002, about 3 -11 incidents were reported annually, with the total weight of munitions involved not exceeding 512 kg a year. The highest number of incidents during the last 20 years was in 1991 when a total of 5 378 kg of munitions was netted in 103 incidents.

About 40 000 tonnes of chemical munitions were dumped into the Baltic Sea after the Second World War – mostly in the area to the east of Bornholm, southeast of Gotland and south of the Little Belt. It is estimated that these chemical munitions contained some 13 000 tonnes of chemical warfare agents. Dumping areas are marked as foul, with “anchoring and fishing not recommended” on nautical charts. However, fishing in these waters is not prohibited, and commercial fishing is continuing.

Warfare agents are also discovered outside the dumping areas from time to time, especially near Bornholm. Fishermen in these waters regularly find bombs, shells or fragments of munitions and even lumps of mustard gas in their bottom trawl nets. The crews of fishing vessels risk contamination from chemical warfare agents if lumps of viscous mustard gas or chemical munitions caught in bottom trawls are hauled on board. Simply



Waters where World War II chemical munitions were dumped

touching these chemical agents or inhaling their vapours is very dangerous.

Chemical warfare agents break down at varying rates into less toxic, water-soluble substances. Some compounds, however, show an extremely low solubility and slow degradability (e.g. viscous mustard gas, Clark I and II, and Adamsite). These compounds cannot occur at higher concentrations in water, so any wide-scale threat to the marine environment from these dissolved chemical warfare agents can be ruled out. HELCOM has carried out extensive assessments and concluded that any threat to coastal areas from such residues of warfare agents or chemical munitions is also unlikely.

Third HELCOM Youth Forum: inspiring the next generation

“Nine states – one identity” was the theme of the Third HELCOM Youth Forum, held on 15-17 August in Flensburg, Germany. Nearly 30 student delegates, representing several Baltic Sea coastal countries met to exchange views on how to enhance international co-operation on environmental protection and sustainable development around the Baltic Sea region, and to convey creative new ideas and policy recommendations to decision-makers.

The Third HELCOM Youth Forum was organised by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, in co-operation with other partners including the German Federal Maritime and Hydrographic Agency, Landtag Mecklenburg-Vorpommern, the Baltic Sea Forum, and Flensburg Tourismus und Stadtmarketing.



Heike Imhoff, Head of the German Delegation to HELCOM

The HELCOM Youth Forum provides an excellent opportunity for tomorrow’s leaders to interact with HELCOM representatives and current decision-makers from the Baltic Sea countries. The forum also aims to increase awareness of environmental issues and sustainable development.

“HELCOM is convinced that increasing public awareness among young people is of utmost importance for securing future generations’ interest in the Baltic,” said Heike Imhoff of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, who heads the German Delegation to HELCOM.

“By regularly performing youth forums HELCOM has initiated a long-term strategy of drawing young people’s attention to regional environmental and sustainable development issues and proactively involving

students in the work of the Helsinki Commission.”

“The main aim of the Youth Forum is to encourage young people to become interested and participate in decision-making process associated with environmentally sustainable development in the Baltic Sea region,” said Anne Christine Brusendorff, Executive Secretary of HELCOM. “Inspiring the next generation of leaders to become actively involved in environmental issues will ensure an economically and environmentally sound future for the sea we all share.”

Several Workshops during the forum offered participants the opportunity to actively investigate various views and defend personal evaluations on such issues as the role of the Helsinki Commission in protecting the Baltic

of environmental leaders



in March 2007. The students' ideas will then also be incorporated into the Baltic Sea Action Plan, which is due to be adopted at the HELCOM Ministerial Meeting scheduled for 15 November 2007 in Warsaw, Poland.

and resulted in a resolution "Our Baltic Sea of tomorrow", which is comprised of the students' visions and concrete demands directed at politicians and key players around the Baltic Sea region.

The HELCOM Youth Forums, which are designed to echo the concerns of young people and feed their personal visions into future policies affecting the Baltic Sea, have been already hailed a success. The First Youth Forum was held on 1 March 2004 in Helsinki, Finland, in connection with the 30th Anniversary Jubilee Session of the Helsinki Commission. The Forum adopted a Youth Declaration, which was handed over to the President of the Republic of Finland Tarja Halonen. The Second Youth Forum was held on 9-11 August 2005 in Rostock-Warnemünde, Germany,

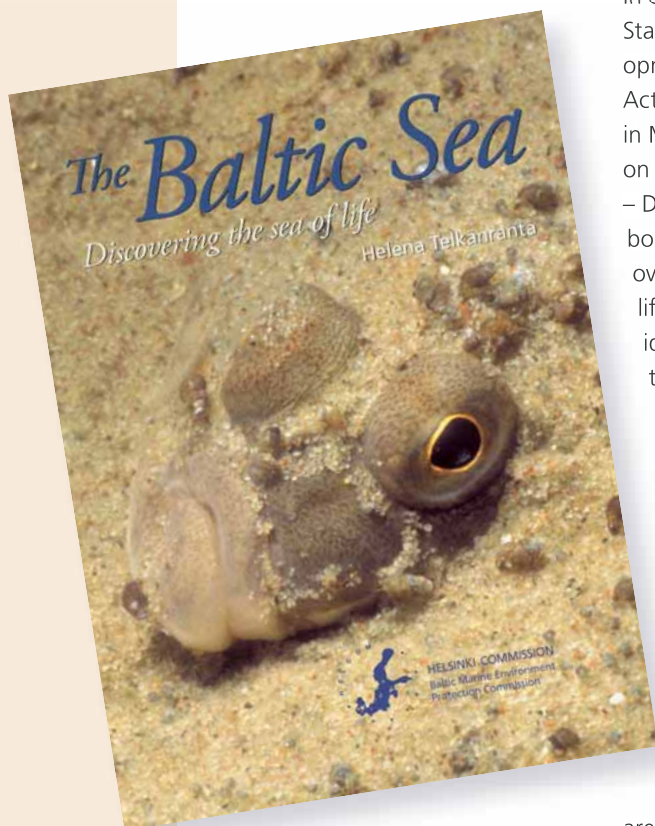
marine environment, joint international actions on key environmental issues affecting the Baltic Sea, and ways to balance the economic use and ecological needs of the Baltic Sea.

One of the top subjects on the agenda was the objectives of the strategic HELCOM Baltic Sea Action Plan. "We had a lot of input and heard a lot of creative ideas from young people, who displayed sincere interest to contribute towards making the new HELCOM strategy even more relevant and robust," said Prof. Peter Ehlers, President of the German Federal Maritime and Hydrographic Agency and Chair of the HELCOM Youth Forum.



The Final Conclusions of the Youth Forum will be presented at the annual meeting of the Helsinki Commission

New HELCOM book explores the variety of marine life in the Baltic Sea



In conjunction with the kick-off Stakeholder Conference on the development of the HELCOM Baltic Sea Action Plan, the Helsinki Commission in March 2006 launched its new book on biodiversity, entitled 'The Baltic Sea – Discovering the sea of life'. The new book provides the first ever popular overview of the variety of marine life around the Baltic Sea. The main idea of this HELCOM publication is to convey to the general public the message that this unique and beautiful sea, full of life, must be carefully cherished and protected.

This 105-page hardcover book with its many stunning high-quality photos, including rare underwater images, takes readers on an exciting journey into the Baltic marine world, to discover fascinating life forms that live so close to us, yet are still unknown to many. The book proves that the Baltic Sea is truly more

than meets the eye, and is home to a wealth of wildlife, including many underwater creatures that few of us ever have the chance to see, as well as more familiar seals, porpoises, and seabirds.

The storyline of the book follows the journey of a pair of swans around the Baltic Sea – from Denmark, through Germany, Sweden, and Finland in the north and back south through Estonia, Latvia, Lithuania, Russia and Poland. This journey takes the reader soaring over the shores of the Baltic Sea with seabirds, and plunging deep into its waters to discover exotic fish and beautiful marine gardens.

To reach a wider audience the book incorporates a two-tier approach. The accessible but also scientifically accurate story of the swans' journey is accompanied by enlightening information boxes which provide general facts and figures about the Baltic Sea

HELCOM Executive Secretary Anne Christine Brusendorff presents a copy of the new HELCOM book 'The Baltic Sea – Discovering the sea of life' to the Speaker of the Parliament of Finland Paavo Lipponen, at the Baltic Sea Day event held in the Parliament of Finland in March



and different species, as well as about HELCOM's efforts to conserve the Baltic's biodiversity. This enables the book to serve as a reference guide to marine life in the Baltic, to the environmental problems that face this sensitive sea, and to solutions that could restore its healthy natural balance. The book also includes good news about successes already accomplished in terms of the protection of the Baltic marine environment.

The book can be considered as a 'must read' for anyone interested in the marine life of the Baltic, and the present state of our sea. It emphasizes the beauty and fragility of the Baltic's diverse ecosystems, while also highlighting environmental challenges and the need for protective measures.

'The Baltic Sea – Discovering the sea of life' has been written by Helena Telkänranta, a Finnish science writer

who specialises in nature and conservation, with the help of an editorial board of HELCOM experts. The book's layout is designed by Leena Närhi of Bitdesign, Finland, and includes more than 100 superb photos taken by dozens of photographers from all around the Baltic Sea region.

HELCOM provides teaching materials on Ecological Objectives

"Lord of the Things. An adventure to discover Ecological Objectives – a healthy and diverse Baltic Sea of the future" consists of an animated film and related teaching materials designed to help teachers deal with questions related to the protection of the Baltic Sea. This innovative and fun material can be used in English, Biology and Geography lessons.

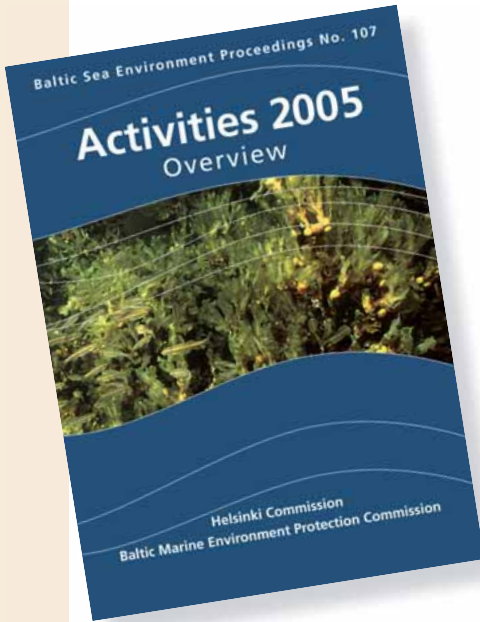
Viewers join Frodovich and Glunkton the Plankton on their exciting journey to deliver the "Thing of Ignorance" back to its origins in the heart of the Baltic Sea – the only place where this evil can be destroyed! Wrapped in a humorous plot – and borrowing a few ideas from certain well-known literary sources – "Lord of the Things" encourages students and other viewers to set themselves objectives to help make the Baltic Sea clean and healthy.

The eight-minute animation and related teaching materials are part of the HELCOM Ecological Objectives Project, which aims to make all sectors of society consider their impacts on the marine ecosystems of the Baltic.



Latest HELCOM publications

HELCOM Activities 2005 Overview

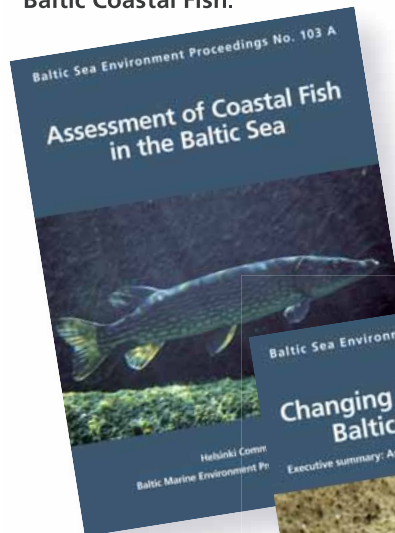


This report summarises the activities of the Helsinki Commission related to the protection of the Baltic Sea marine environment over the period from March 2005 to March 2006, also reviewing these activities together with current trends related to the main environmental issues.

Assessment of Coastal Fish in the Baltic Sea

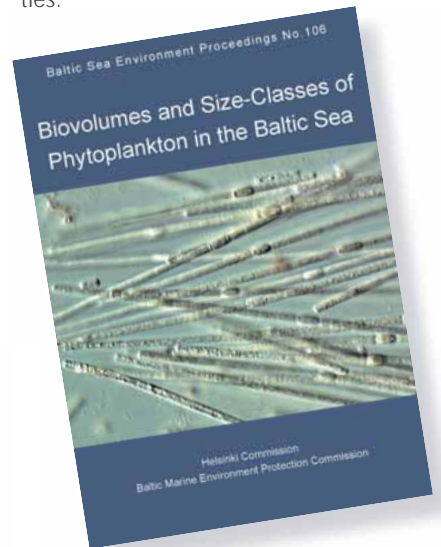
This report presents the results of coastal fish monitoring using multi-mesh gillnet and gillnet catch series, which have been carried out in fifteen areas of the Baltic Sea. This monitoring aims to reveal long-term trends in fish populations and fish community development, and to try to discover the causes of these trends in terms of both natural factors and anthropogenic pressures. The report covers current time series of varying length up to 22 years of annual monitoring. This report also proposes some potential Ecological Objectives for the forthcoming Baltic Sea Action Plan, as well as a set of indicators for assessing status and trends in the coastal fish populations of the Baltic Sea.

An executive summary of this assessment is also available separately, entitled **Changing Communities of Baltic Coastal Fish**.



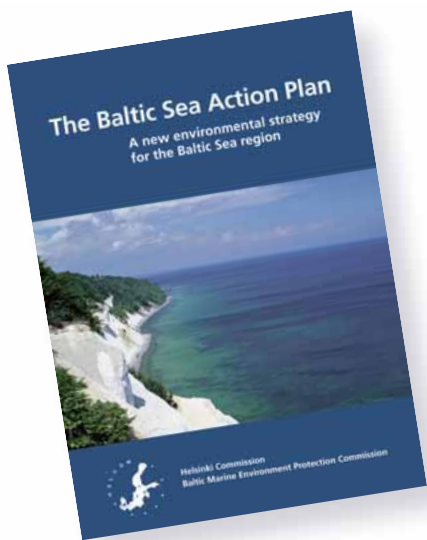
Biovolumes and Size-Classes of Phytoplankton in the Baltic Sea

The use of a standardised species list with fixed size-classes and biovolumes contained in this report will greatly help to improve the quality of phytoplankton counting methods and the comparability of results. Phytoplankton is a basic component of aquatic ecosystems. It is impossible to understand and model aquatic ecosystems without a good knowledge of the species composition, productivity and biomass of phytoplankton communities.



The Baltic Sea Action Plan

This brochure explains the aims of the HELCOM Baltic Sea Action Plan, the bases on which it will be developed, and the role of HELCOM. The booklet also describes the key environmental issues that need to be addressed, and describes some of the various types of concrete actions that will have to be undertaken. The aim of this brochure is to raise public awareness and promote wide stakeholder participation in the process of drawing up and adopting the plan.



HELCOM background information to the Baltic Sea Informal Meeting for Ministers of the Environment

The Helsinki Commission's input to the Stockholm Ministerial Meeting contains up-to-date background information on the status of the Baltic marine environment and current trends in the key areas of concern: eutrophication, hazardous substances, maritime activities and biodiversity. It also describes HELCOM's multinational activities in the protection of the Baltic marine environment over the last 30 years, and reports on progress towards the development of an innovative strategic Baltic Sea Action Plan.



Baltic Sea Action Plan Stakeholder Conference materials

This comprehensive set of materials related to the Stakeholder Conference on the development of the HELCOM Baltic Sea Action Plan, held on 7 March 2006 in Helsinki, Finland, includes: a general presentation of the aims and timing of the Baltic Sea Action Plan; an introduction to the state of the marine environment; draft HELCOM thematic assessment reports; various presentations and comments from the four thematic sessions on the proposed objectives for the main environmental issues; and presentations by high-level politicians. The materials are available via the HELCOM website at http://www.helcom.fi/BSAP/kickoff/en_GB/kick_off/. For additional information on the whole concept of the HELCOM Baltic Sea Action Plan, please visit http://www.helcom.fi/BSAP/en_GB/intro/.



These reports and publications can all be viewed on the HELCOM website at www.helcom.fi. A complete list of HELCOM publications is available at: <http://www.helcom.fi/publications>, where these publications can also be viewed. To order your print copy, please call the HELCOM Secretariat: +358 (0)207 412 649 or send an e-mail to info@helcom.fi.

Upcoming HELCOM Meetings

13 – 15 September 2006

Seventh Meeting of the Response Group (HELCOM RESPONSE 7/2006), Gdynia, Poland

2 – 6 October 2006

Ninth Meeting of the Monitoring and Assessment Group (HELCOM MONAS 9/2006), Silkeborg, Denmark

18 – 20 October 2006

First Meeting of the HELCOM Seal Expert Group, Sigtuna, Sweden

25 – 26 October 2006

Second Meeting of the ad hoc Task Force for the Development of the HELCOM Baltic Sea Action Plan, Stockholm, Sweden

25 – 27 October 2006

BALANCE/HELCOM Workshop on practical criteria for assessing the ecological coherence of networks of MPAs in the Baltic Sea, Helsinki, Finland

31 October – 2 November 2006

Fifth Meeting of the Maritime Group (HELCOM MARITIME 5/2006), Tallinn, Estonia

14 -15 December 2006

20th Meeting of the Heads of Delegation (HELCOM HOD 20/2006), Helsinki, Finland

6 March 2007

HELCOM Stakeholder Conference, Helsinki, Finland

7 – 8 March 2007

28th Meeting of the Helsinki Commission (HELCOM 28/2007), Helsinki, Finland

7 – 11 May 2007

Ninth Meeting of the Nature Conservation and Biodiversity Group (HELCOM HABITAT 9/2007), Vilnius, Lithuania

22 – 24 May 2007

Twelfth Meeting of the Land-based Pollution Group (HELCOM LAND 12/2007), [Finland]

29 May – 1 June 2007

Twelfth Meeting of the Project Group for Monitoring of Radioactive Substances in the Baltic Sea (HELCOM MORS-PRO 12/2007), Hamburg, Germany

4 – 8 June 2007

5th Study Conference on BALTEX organised with HELCOM's contribution, Kuressaare, Estonia

14 – 15 November 2007

HELCOM Extraordinary Ministerial Meeting, Warsaw, Poland

New staff at the HELCOM Secretariat

Mr. Jukka Mehtonen took up the position of the Hazardous Substances Project Researcher on 1 March 2006, and Mr. Hermann Backer, Ecological Objectives Project Researcher, has prolonged his contract.

Ms. Monika Stankiewicz will be HELCOM's new Professional Secretary for maritime and response issues from 1 October 2006, replacing Mr. Tadas Navickas, who is leaving the Secretariat.

