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REPORT OF THE WORKING GROUP ON THE BALTIC MARINE ENVIRONMENT

Helsinki, Finland, 21-23 April 1993

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WORKING GROUP ON THE BALTIC MARINE ENVIRONMENT

Helsinki, Finland, 21-23 April 1993

1 OPENING OF THE MEETING

The Chairman, Dr Hans-Peter Hansen, opened the 1993 meeting of the Working Group on the Baltic Marine Environment (WGBME) at the Finnish Institute of Marine Research on 21 April 1993 at 10.00 hrs. Dr Matti Perttilä was asked to serve as Rapporteur. It was noted with regret that no scientists from Denmark, Russia, Latvia, Lithuania or Poland were present. The list of participants at the meeting is attached as Annex 1.

2 ADOPTION OF THE AGENDA

The draft agenda was adopted with minor modifications and is attached as Annex 2.

3 REPORTS ON ACTIVITIES RELEVANT TO THE WGBME

3.1 Activities within ICES

The ICES Environment Secretary, Ms Janet Pawlak, informed the meeting about on-going activities within the ICES community. The Advisory Committee on Marine Pollution (ACMP) has been transformed into the Advisory Committee on the Marine Environment (ACME), which more accurately encompasses the wider scope of its duties, that will be officially fixed later this year. One important change for the new ACME is the composition of its members. In the past, ICES appointed the ACME members, now each ICES member country will be asked to nominate one member and one alternate to the ACME, for ultimate appointment by the Council. It is expected that the ACME will provide advice on broader aspects of marine environmental issues.

It was noted that several new working groups have been added to the ICES network. A new working group has been established to study the effects of climate change on cod. Also, the issue of quality assurance is becoming of central importance, and consequently Steering Groups have been established for both chemical and biological quality assurance in the Baltic Sea. A Steering Group on Baltic Modelling is also starting its work.

It is known that a great deal of oceanographic data for the Baltic Sea, collected by Russia, Estonia, Latvia, and Lithuania, are still held in manuscript form in the various marine institutes of these countries. Although some of these data may have been passed on to the World Data Centre B (Obninsk, Russia), a considerable amount of

work remains to be done to have these data digitized and then made available publicly. At present, two parallel efforts are underway to 'rescue' these data. The ICES Oceanography Secretary has written to all relevant institutes in Russia, Estonia, Latvia, and Lithuania offering help to digitize their data. There has been little reaction to this offer so far. In addition, ICES will co-sponsor a workshop in May 1993 at the World Data Centre B in support of IOC's "Global Data Archaeology and Rescue Project" (GODAR). This workshop will seek to identify the location and condition of all oceanographic data in those countries. Although the primary interests of this Project concern data from the open ocean, it is clear that the workshop will identify the existence of undigitized oceanographic data from the Baltic Sea, and make appropriate recommendations to ensure that they will be digitized as soon as possible. The Working Group noted that the success of this workshop may well be aided by a German "goodwill" project to establish computer facilities in several institutes in this region.

It was noted that the above situation concerning undigitized oceanographic data does not apply to Poland. ICES has been cooperating closely with a number of Polish institutes for a number of years and, as a result, most Polish data for the Baltic Sea are available in digitized form.

3.2 Activities related to the HELCOM and the BMP

As a representative from the HELCOM was not present at the meeting, there was no report for this agenda item. However, matters of relevance to HELCOM and BMP were discussed in conjunction with the items on Quality Assurance and the Baltic "Hot-line Network".

3.3 Relationships with Other Organizations

Dr Bernt-Ingmar Dybern reported on the activities of the Baltic Marine Biologists (BMB). The BMB has several working groups involved with modelling, fish stocks, fish diseases, zooplankton, and other relevant topics. The 13th Symposium of the BMB will be held in Riga in September 1993. A joint BMB-WWF (World Wide Fund for Nature) working group has been established with the aim of selecting protected marine underwater areas. About 50 areas representing different typical Baltic Sea habitats have already been identified and proposed. The project is partially financed by the Nordic Council of Ministers.

Dr Dybern also reported on the concept of Large Marine Ecosystems (LMEs). A symposium on LMEs is presently being prepared for 1994. Three main areas of interest will be addressed at the symposium: LMEs as a general concept, the Baltic Sea as an LME, and a comparison between the Black Sea and the Baltic Sea.

Although ICES has preferred the regional approach to the marine environment in the past, the holistic approach was viewed by the WGBME as a useful tool which can be used in parallel to the regional approach. It was noted that politicians and the public often prefer sweeping generalizations rather than detailed accounts of local events. It was further pointed out that the characteristics of the different areas of the Baltic Sea differ so vastly from each other that it may not always be advisable to use only a holistic approach on the Baltic Sea. Nonetheless, the WGBME welcomes the opportunity to consider the LME approach as an alternative to the regional approach, as well as the possibility of integrating the existing regional information into a holistic view.

3.4 National Activities

Dr Rein Tammsalu and Dr Lembit Talpsepp reported on new developments regarding marine science in Estonia. A new institute has been founded, the Estonian Institute of Marine Research. Modelling of the ecosystem of the Gulf of Finland is presently of major interest, as well as the new project on the Gulf of Riga (see later). The January 1993 inflow of saline water into the Baltic Sea has provided a good justification for monitoring and research.

Dr Matti Perttilä reported on research interests at the Finnish Institute of Marine Research (FIMR). The emphasis is gradually shifting from the Gulf of Bothnia to the Gulf of Finland. The NMR (Nordic Council of Ministers) project on the Gulf of Riga has also gained interest. The FIMR is actively engaged in the Sediment Baseline Study, the final preparatory meeting for which was held in Helsinki the day before the beginning of the WGBME meeting. In the field of monitoring, Finnish experts are proposing that ordinary monitoring activities gradually be reduced by shifting towards a greater use of fixed moorings and ships of occasion; they also emphasize the importance of winter monitoring as a tool to assess nutrient pools.

Dr Ulrich Lass explained the reorganization of the Institut für Ostseeforschung in Warnemünde. The emphasis on autonomous data collection stations has increased; at Darss Sill a test station has been established to measure temperature, salinity and meteorological parameters. A joint German-Polish project on coastal zone-open sea fluxes in the Pomeranian Bay is being planned.

The marine research situation in Latvia and Lithuania was briefly commented on by Mr Rein Tammsalu. He noted that most of the marine research efforts in Latvia are now concentrating on the Gulf of Riga, in connection with the NMR projects. Budgetary constraints continue to hamper other oceanographic research in both countries. Mr Hans Dahlin noted that Sweden is cooperating with these countries, e.g., by aiding in the construction of telecommunication systems.

Representatives from Poland or from Russia were not present at the meeting. A short discussion arose concerning the participation by representatives from all countries around the Baltic Sea at meetings of this Working Group, as it was agreed that some changes should be made. It was noted that the WGBME itself could not intervene, but members were urged to contact their respective national delegates to ICES to take up this issue during the next Statutory Meeting.

Mr Hans Dahlin reported on the situation in Sweden. The reorganization of the Swedish Meteorological and Hydrological Institute (SMHI) has resulted in the disappearance of oceanography as an independent department; instead, services and projects will be obtained under contracts with different administrative units. Sweden has declared an Exclusive Economic Zone. This does not affect applications for permission to enter Swedish waters, but it increases Sweden's responsibilities concerning the protection of the marine environment in these designated areas. The national environmental monitoring programme has been revised. The general tendency in marine monitoring is toward a higher sampling frequency at a decreased number of stations. The entire station net will be visited 1-2 times per year, but the sampling frequency at selected sites may be as high as once every 10 days. The new system has been established in order to improve the data base on the marine environment, and also to serve as a detection network for sudden events, such as algal blooms. New automatic sampling stations are being established in association with Sea Watch Europe. The major Swedish programme, "Large Scale Project on the Baltic Sea", is approaching its final stage.

4 REPORTS OF STUDY AND STEERING GROUPS

4.1 Baseline Study of Contaminants in Sediments

Dr Perttilä gave an account of the recent meeting of the Steering Group for the Coordination of the Baseline Study of Contaminants in Baltic Sea Sediments. The Steering Group is now making final preparations for the Baseline Study expedition. The cruise will start on 13 June 1993 at Copenhagen and end on 9 July at Helsinki. The cruise itinerary has been decided, and applications for entering the national waters have been submitted

accordingly. The delegation of responsibilities for the logistics and facilities on board the research vessel has been completed, as well as the list of participants in the cruise. Samples (3000 - 3500, including parallel samples) will be freeze-dried in a commercial unit after the cruise, and distributed thereafter to the participating laboratories. Most of the project financing is via the research budgets of the participating institutes. ICES has allocated DKK 20,000 for the study, and HELCOM FIM 140,000 (subject to change, depending on the balance of the HELCOM budget). No financing has yet been found for the analysis of organic contaminants. Samples for these analyses will, however, be taken during the cruise in the hope that these analyses can be carried out at a later time. Finances are available for age determination, carbon and nutrient analyses, as well as for the trace element analyses. Because of difficulties in financing (owing to the high costs of the project), the deadline for the completion of the analyses has been set at 31 December 1995. The deadline for the completion of a joint report on the results has been set at 31 December 1996. ICES will serve as the data center for the project. Data will only be accessible to the participants until the joint report has been published.

4.2 Environmental Modelling of the Baltic Sea

As Dr Fredrik Wulff was unable to attend the meeting, Mr Hans Dahlin gave an overview of the present situation regarding modelling activities. Several models are available, e.g., at least five modifications of the Princeton model. Especially popular are models relevant to water quality monitoring purposes. A workshop on environmental modelling will be held later in 1993, either in Sweden or in Germany. If the workshop is held in Germany (Warnemünde) in connection with an ECOPS (European Committee for Ocean and Polar Science) meeting, travel expenses could possibly be shared. The Working Group decided to support the idea of coordinating the scheduling of the modelling workshop and the ECOPS meeting, as the two meetings involve many of the same participants. The Chairman agreed to approach the organizer of the ECOPS meeting (Professor G. Hempel) regarding this matter.

5 JOINT ACTIVITIES IN THE BALTIC

5.1 Review of SKAGEX

Dr Dybern gave an overview on the developments in the SKAGEX project. A SKAGEX atlas is in preparation. Models that provide an association between hydrographic conditions and biological events are being constructed and are able to make a distinction between the movements of North Sea and Atlantic water masses. The results also indicate that the northward Jutland coastal current is only intermittent and probably unimportant

with respect to the biology of the area. The results show that the well-known "dome-like" distribution of nutrients and chlorophyll, penetrating from the North Sea into the Skagerrak area, is an elongated structure rising to near the surface (30-40 m), and possibly explaining the high biological production in the Skagerrak.

During the discussion of Dr Dybern's presentation, it was suggested that the "dome" structure is a consequence of the circulation pattern which has a weak baroclinic component, causing continuous upwelling in the central area of the Skagerrak.

5.2 Coastal Zone-Open Sea Flux Studies in the Joint Experiment in the Gulf of Finland

Dr Perttilä gave an overview of this project. At the 1992 WGBME meeting in Lysekil, an *ad hoc* study group prepared tentative plans for a joint study on coastal zone/open sea fluxes to be carried out in the Gulf of Finland, concentrating on vertical/horizontal hydrographic and biological fluxes, with the overall aim of obtaining a detailed ecological model for the main nutrients and the biological production in the area. There seems to be general interest in this type of study in the three countries bordering the Gulf of Finland (Estonia, Russia and Finland). A tentative schedule has been agreed, with the field year in 1995.

Although ICES has charged the WGBME to develop large-scale international projects in the Baltic Sea area, plans for other similar international studies became known after the 1992 WGBME meeting. These include the German-Polish project in the Pomeranian Bay, the tentative project for a flux study in the Gotland Deep area, and the BALTEX project, all of which probably compete at least partially for the same financial resources. Also, the existence of another ICES group, the Steering Group on Fisheries/Environmental Management Objectives and Supporting Research Programmes in the Baltic Sea (SGFEMO), chaired by Dr S. Karnicki, which has been charged with the preparation of research proposals on important issues in the Baltic Sea area from an environmental or fisheries management perspective, has caused uncertainty as to the usefulness of continuing the planning of the Gulf of Finland project. Ulrich Lass and Bernt I. Dybern reported that a workshop sponsored by the European Committee for Ocean and Polar Sciences (ECOPS) in Warnemünde in March 1993 had been receptive to cooperation with ICES on flux studies in the Baltic Sea.

The WGBME decided to recommend that ICES invite the Steering Group for the ECOPS project in the Baltic Sea to cooperate in efforts related to the conduct of a comprehensive Flux Study in the Baltic (Gulf of Finland/Gotland basin area). Such cooperation could be achieved through the participation of the Chairman of WGBME

and the Coordinator of the Gulf of Finland Flux Study in the ECOPS Steering Group activities. An initiative for a coordinated study of the on-going inflow of saline water into the Baltic Sea had also been taken at the Warnemünde Workshop, which had also been receptive to cooperation with ICES on this topic. Dr U. Lass (Germany) has been appointed coordinator for this latter study.

It was noted with regret that instead of the customary procedure of first identifying the gaps in knowledge about specific natural processes, then designing a project to provide the required answers, and ultimately trying to obtain financing for this project, the scientific-political climate has now reversed the procedure: financing is first advertised as being available and a project is then sketched to meet the requirements of the financing body.

In the subsequent lively discussion, several new and important pieces of information were provided to the participants. The European Community is expanding, and a new phase of the Marine Science and Technology project area is approaching (MAST-3). Thus, new links must be established. The EC also wants to support marine scientific research in eastern European countries. In addition, within ICES a steering mechanism has been created which will take into account the managerial view on research needs in the Baltic Sea on an intermediate-term perspective. The SGFEMO has been set up for this purpose.

Dr Dybern explained the European Community interests in marine scientific research in the Baltic Sea, which have been reflected in the outcome of the meeting of the ECOPS Steering Group for the Gotland Deep Flux Study, held in Warnemünde on 18 - 19 March 1993. Two lines of progress will be followed, one being a short-term project connected with the effects of the recent salt water inflow, including a pilot study in the Gotland Deep, and the other having a long-term perspective and concentrating on the anthropogenic impacts on the Baltic ecosystem. The latter would include inputs of fresh water and discharges, climatic aspects and critical processes, leading to long-term time series analyses, budget analyses of fluxes, and ecosystem modelling. The study has been tentatively planned to start in 1995 or 1996, and the planning phase will include the conduct of workshops, to be held in Tallinn, Riga and other eastern Baltic cities.

The WGBME decided to charge the Convener of the *ad hoc* Study Group on the Flux Study in the Gulf of Finland, Dr Perttilä, and the WGBME chairman, Dr Hansen, to establish contacts with the ECOPS Steering Group for the Gotland Deep Flux Study, and to propose that the two projects should be combined, if possible.

The ICES Environment Secretary, Ms Pawlak, explained the duties of the SGFEMO, which emphasize the planning of research projects that can assist in the development of realistic regulatory measures for Baltic Sea fisheries and environmental protection. While there seems to be an overlap in the respective duties of the WGBME and the SGFEMO, it appears that this overlap is largely due to a poor exchange of information within the ICES network. The relations between the two groups are further discussed under agenda item 7.

5.3 GEWEX/BALTEX

Mr Dahlin informed the WGBME about the Global Experiment on Water Exchange (GEWEX) project; the Baltic Sea is one of the impact areas being studied in the framework of GEWEX. It is estimated that this project (BALTEX) will continue for the next 25 years. The goal of the project is to produce a 3-dimensional model that can interact with meteorological models in order to simulate the transport system of water and energy as a whole. The Baltic Sea area is treated as a cage comprising not only the sea itself, but also the entire drainage area. Verification of the models and the study of critical processes calls for cooperation with ICES.

5.4 Other Projects

The Gotland Deep:

The ECOPS Steering Group for the intended flux study in the Gotland Deep area held its first meeting in Warnemünde in March 1993. So far, no report is available by which the aims of the project can be assessed.

The Year of the Gulf of Bothnia:

This joint Finnish-Swedish project is now entering its final phase. Roughly 70 scientific papers on biology, physical processes, fish and fisheries, harmful substances and their effects, discharges and material balance models are in preparation. The final seminar on the results will be held in October 1993 in Umeå, Sweden.

The Gulf of Riga:

In a new research programme of the Nordic Council of Ministers (NMR), environmental research in the Baltic Sea plays an important role. Due to the recent political changes, and because the Gulf of Riga has long been an area closed to scientists from outside the immediately bordering countries, it was chosen as the target area for the years 1993-1997. The overall approach includes several projects on material budget calculations, discharges, sedimentation and benthos, pelagic eutrophication and water exchange.

According to the conditions established by the NMR for participation in the project, a close cooperation between Nordic and Baltic (Estonian and Latvian) scientists is

essential for each accepted project. Sedimentological studies will be part of the experimental phase during the summer of 1993.

6 REVIEW OF THE WORK OF THE STEERING GROUPS ON QUALITY ASSURANCE OF CHEMICAL AND BIOLOGICAL MEASUREMENTS

Janet Pawlak reviewed the progress made by the Steering Groups on Quality Assurance of Biological and Chemical Measurements in the Baltic Sea, in the light of the draft reports of their recent meetings. The WGBME expressed its concern over the seemingly different concepts of the term Quality Assurance (QA) used by the two groups. In the chemical group, emphasis is strongly placed on the practical and methodological aspects of QA, i.e., the planning of a workshop to be held later in 1993 in Hamburg. However, the biological group seems to give its main support to the revision of the Guidelines of the Baltic Monitoring Programme. It was noted that the term Quality Assurance includes every measure necessary to ensure adequate quality of the monitoring results, including full documentation of every step taken in the sample history, practical quality control (internal and external), account of corrective measures, and data analysis. The guidelines giving the rules for all aspects of QA are contained in a "Laboratory Quality Manual". Thus, in its broadest sense, quality assurance can be understood to also include steps to improve the BMP strategy itself, as is emphasised by the Steering Group for Quality Assurance of Biological Measurements. However, the WGBME supports the view that the Steering Groups should restrict themselves to the practical aspects of quality assurance, in order to keep the amount of work under control and the deadlines for implementation realistic. Moreover, it was noted that the HELCOM already has a Group of Experts for the revision of the BMP guidelines. Members of the Steering Groups have been selected with quality assurance expertise as a criterion.

Matti Perttilä gave a short account of the progress in the European Community project QUASIMEME (Quality Assurance of Information for Marine Environmental Monitoring in Europe). In many ways, this programme continues the long-standing work carried out by the ICES Marine Chemistry Working Group, extending it to the recommendation of corrective measures for the participating laboratories. The QUASIMEME programme has now been launched and it includes, in the first phase, several interlaboratory comparisons on determinations of nutrients, organochlorines and trace elements. The results will be assessed, and detailed analyses of these results will serve as feedback to the laboratories. In principle, only laboratories from countries within the EC and the EFTA can participate.

Progress in the QUASIMEME programme will be reported in a serial bulletin, which can be obtained through the national representatives of the programme. The WGBME holds the view that the Steering Groups on QA in the Baltic Sea should continue their work without waiting for improvements in the BMP to be carried out. However, in view of the similarity between the quality control aspects for many chemical and biological parameters, and in view of the QUASIMEME programme, the Group expressed concern about the possibility of overlapping work, and decided to recommend close cooperation between the ICES QA and the QUASIMEME groups.

7 STRATEGY PLAN FOR THE WGBME

The need to obtain full information from the other ICES groups having an interest in Baltic Sea research was stressed several times. The ICES Steering Group on Fisheries/Environmental Management Objectives and Supporting Research Programmes in the Baltic Sea (SGFEMO) has identified four areas of research, which are considered to have the highest priority from the point of view of their significance in terms of fisheries and environmental management objectives. These research areas are eutrophication, stable organic substances, fish stock management, and hydrography. Elaborating feasible projects within these fields has been left to named convenors and working groups.

Two of these convenors are Hans-Peter Hansen (for eutrophication) and Hans Dahlin (for hydrography). They requested that the WGBME indicate important projects in their respective fields. It should be noted that no funding for these projects will be available directly. The SGFEMO needs answers for its next meeting, which will be held 18-19 June 1993. There was general agreement in the WGBME that time constraints prevented a full treatment of the subject. Consequently, Janet Pawlak suggested that only existing proposals for projects should be reviewed and a recommendation on some of these could be sent for consideration by the SGFEMO, also sketching the complexity of the problem.

A lively discussion followed, after which ecosystem modelling was agreed upon for more detailed consideration, since it would, in principle, be useful both for managerial cost/effect evaluations (e.g., consequences of environmental measures) and for scientists for identifying gaps in existing knowledge. Matti Perttilä, Rein Tammsalu, and Kaisa Kononen volunteered to sketch a proposal for the SGFEMO, highlighting the purpose and uses of ecosystem modelling. As the basis for this proposal, the existing proposal for ecosystem model development of the Gulf of Finland, which is a joint Finnish-Estonian effort, would be used. This model uses hydrographic conditions as a starting point, and thus also

partly addresses the second issue raised by the SGFEMO.

8 ACUTE EVENTS AND THE BALTIC "HOT LINE NETWORK"

8.1 Collection and Assessment of Data on Actual Environmental Events

Important recent events affecting the Baltic marine environment include the inflow of saline water from the Skagerrak into the Baltic Sea, and the occurrence of harmful algal blooms. An account of these events was given, and the need for a more intensive and rapid exchange of information among Baltic Sea scientists was discussed. No acute algal blooms of more than local importance were reported.

B.I. Dybern gave an account of the activities of the IOC/FAO Intergovernmental Panel on Harmful Algal Blooms which had recently been established to coordinate global research, and to provide information and management advice related to harmful algal blooms. These blooms are a nuisance in many coastal areas and are also found in the Baltic Sea area. The Intergovernmental Oceanographic Commission (IOC) has taken the lead on activities to better understand the development and dynamics of these blooms with the aim of developing methods to abate them or neutralize them in the future. This kind of work demands the availability of experts in many disciplines, such as marine botany and zoology, marine physics and chemistry, genetics, taxonomy, toxin chemistry, and different aspects of management. Only very few countries or organizations have access to the appropriate expertise, and developing countries are especially disadvantaged in this regard. Among marine organizations, ICES has a considerable number of experts and has also been asked by the IOC to actively cooperate in the global programme.

The WGBME considered harmful algal blooms to be a problem in the Baltic area and that more efforts should be made to elucidate this issue. The Baltic Marine Biologists (BMB) were invited to cooperate with the WGBME on this topic.

Global problems with harmful algal blooms were acknowledged and it was strongly recommended that ICES support the IOC activities. It was pointed out that such support could be potentially beneficial for the ICES community in the form of information on various aspects on the blooming of harmful plankton species. In this context, the WGBME strongly supported a suggestion to transform the present ICES Study Group on the Dynamics of Algal Blooms into a Working Group on [the Dynamics of] Harmful Algal Blooms in order to

strengthen the ICES input in this area and to enable the organization to take a more active role in global activities. A suggestion for close cooperation between the new Working Group on Algal Blooms and the Working Group on Shelf Seas Oceanography (WGSSO) was also supported. The WGSSO can provide important hydrochemical input to the work on the dynamics of algal blooms.

8.2 The Recent Salt Water Inflow (January/February 1993)

Ulrich Lass, Wolfgang Matthäus and Hans Dahlin presented preliminary results of their findings concerning the salt water inflow. The inflow began on 7 January 1993 and lasted three weeks. It is now estimated that a total of about 310 km³ of saline water entered the Baltic Sea, but only 125 km³ was high salinity water (>17 psu). Therefore, the salinity in the Baltic Sea deep water is not expected to change significantly, possibly only in the order of 1 psu. The transport of the water mass appears to have proceeded very quickly, and already in early April there were intermittent indications of this water approaching the Gotland Deep. These indications include the presence of some oxygen in the near-bottom layer, as well as decreasing temperature and increasing salinity. The saline water inflow has been detected and followed by Swedish and German research vessels, but the cooperation and exchange of information, especially during the early stages of the event, were not without obstacles. Follow-up has been satisfactory mainly by accident, as no defined strategy has been employed.

Especially frustrating, once again, has been the long period needed for the granting of permission for foreign research vessels to enter the national waters of other nations. For this reason, the WGBME agreed to a recommendation stressing the need for more flexibility in the application procedure (see Recommendation 2, Annex 4).

8.3 The Baltic "Hot Line Network"

The Chairman introduced his proposal for intersessional activities concerning the design and implementation of a communication network of active Baltic environmental scientists (see WGBME Report, 1992). The draft of a circular letter and a questionnaire was discussed and accepted with minor modifications. Further action will be taken in the form of intersessional work by the Chairman and the members of the WGBME.

9 INTERSESSIONAL WORK PROGRAMME

Establishment of the "hot line network": The Chairman will circulate a letter to the members of WGBME requesting the nomination of scientists to be included in

the new "hot line network" (Annex 3). Due to the diversity of possible environmental events, specialists in the fields of marine biology, physics and chemistry are needed. Once or twice a year, the "hot line" members should send the convener an account of observed events in their respective areas. Summaries of the reports will be presented at future WGBME meetings. It was stressed that the network is meant for marine scientists acquainted with and having an interest in the Baltic Sea. Hans-Peter Hansen and Hans Dahlin will coordinate the launching of the network. While telephone and telefax are the most conventional forms of communication, Ulrich Lass promised to look into possible alternatives (such as, E-mail, Bulletin-Board Service). An account of progress in the work of this network will be given at the 1994 WGBME meeting. If the need arises, WGBME is ready to take responsibility for any resulting evaluation of data.

The WGBME proposed that the Gulf of Finland Flux Study be included as an integral part of the activities of the Steering Group for the Gotland Deep Study. The convener of the *ad hoc* group, Matti Perttilä, will contact the Steering Group for the Gotland Deep Study. He will also make a compilation of the existing and planned flux studies in the Baltic Sea region for presentation at the 1994 WGBME meeting. It was suggested that this work might lead to a need for a special seminar during the 1996 Conference of the Baltic Oceanographers (CBO).

Salt water inflow: Ulrich Lass will compile information and data on the follow-up of the 1993 saline water inflow and present this at the 1994 WGBME meeting.

Cooperation with the SGFEMO: Matti Perttilä agreed to prepare a proposal for the SGFEMO concerning eutrophication research needs in the Baltic Sea, possibly also including the hydrographic component. This will be done within a period of two weeks. A full account of the purpose and terms of reference of this Steering Group is needed. This will be compiled by Hans-Peter Hansen. It was noted that cooperation between the two groups is necessary, but it is not possible to cooperate without information.

Sampling for the Sediment Baseline Study will be conducted from 13 June to 9 July 1993 on board the Finnish research vessel Aranda, with Matti Perttilä as the senior scientist. An account of the cruise will be given at the 1994 WGBME meeting.

10 ANY OTHER BUSINESS

Ulrich Lass reported on the establishment of a Baltic Sea component of the Global Ocean Observation System. The meeting took note of this, but decided to leave an official reaction to higher levels of the ICES hierarchy.

A HELCOM phytoplankton identification course will be held at the Seili Biological Station in the Finnish Archipelago Sea on 30 August - 3 September 1993.

Hans Dahlin gave an account of the last CBO meeting. The most pressing outcome of the meeting was the lack of organizational structure of the CBO community, and in many cases the bad selection, presentation and quality of the reports. An *ad hoc* group was established (Hans Dahlin, Hans-Peter Hansen and Matti Perttilä) to sketch organizational guidelines for the CBO. It was recommended that they use the BMB organization as an example.

The time and venue of the 1994 WGBME meeting were discussed. The period of 27-29 April 1994 was chosen as the most suitable. If necessary, the Sediment Baseline Steering Group will meet immediately before the WGBME meeting. B.I. Dybern agreed to approach his Russian colleagues in Kaliningrad with the aim of holding the 1994 meeting there. [After the meeting, an invitation was provided from the ATLANTNIRO Institute in Kaliningrad.] The items to be covered in the meeting are listed under Recommendation 3 (Annex 4).

11 CLOSING OF THE MEETING

The Chairman thanked the participants for their contributions and closed the meeting at 11.30 hrs on 23 April 1993.

ANNEX 1

WORKING GROUP ON THE BALTIC MARINE ENVIRONMENT

Helsinki, Finland, 21-23 April 1993

AGENDA

1. Opening of the meeting.
2. Adoption of the agenda.
3. Reports on activities relevant for the WGBME.
 - 3.1 Activities within ICES.
 - 3.2 Activities related to the HELCOM and the BMP.
 - 3.3 Relationships with other organizations.
 - 3.4 National activities.
4. Reports of study and steering groups.
 - 4.1 Baseline Study of Contaminants in Sediments.
 - 4.2 Environmental Modelling of the Baltic Sea.
5. Joint Activities in the Baltic.
 - 5.1 Review of SKAGEX.
 - 5.2 Coastal Zone-Open Sea Studies in the Joint Experiment in the Gulf of Finland.
 - 5.3 GEWEX (Global Experiment on Water Exchange)/Baltex.
 - 5.4 Other projects.
6. Review of the work of the Steering Groups on Quality Assurance of Chemical and Biological Measurements.
 - 6.1 Intercalibration/intercomparison activities.
7. Strategy plan for the WGBME.
8. Acute events and the Baltic "Hot Line Network".
 - 8.1 Collection and assessment of data on actual environmental events.
 - 8.2 The recent salt water inflow (January/February 1993).
 - 8.3 The "Baltic Hot Line Network".
9. Intersessional Work Programme.
10. Any other business.
11. Closing of the meeting.

ANNEX 2

WORKING GROUP ON THE BALTIC MARINE ENVIRONMENT

Helsinki, Finland, 21-23 April 1993

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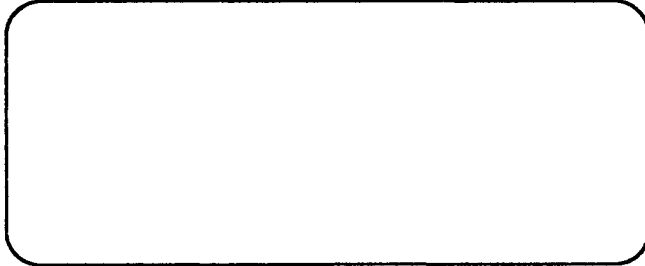
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ANNEX 3

BALTIC ENVIRONMENTAL "HOT LINE NETWORK"

Dr.Hans Peter Hansen

Dr.Hans Peter Hansen, IfM, Düsternbrooker Weg 20, D-2300 Kiel 1



**Institute for Marine Research
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Dear colleague,

at the 1992 meeting in Lysekil the ICES-WG-BME has discussed possibilities of collecting data, scientific information and expertise in case of actual environmental events as, e.g. inflow events of North Sea water, harmful algal blooms, spills of polluting material etc.

It was concluded that existing communication channels do not allow collecting and exchanging information well in time to decide upon joint action to monitor such events and/or take measures to minimize possible environmental damage.

It was suggested to establish a communication system combining Baltic environmental experts in a "Baltic Hot Line Network".

The experts should be familiar with the scientific aspects of environmental problems and focus on an area of the Baltic Sea, e.g. by taking part in a measuring programme in that area .

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The "Hot Line Expert" should thus

- be engaged in regular (long term) measuring programmes or have access to actual data and have a general scientific environmental knowledge of the area
- be trained in interdisciplinary approaches of environmental problems or have interdisciplinary backup
- have access to logistic means to performe ad hoc measurements if required by the actual event or suggested by the "Hot Line Network" group
- have up to date telecommunication facilities

In this way it would be possible to circulate immediate information about actual environmental events, that is within a time span that permits adequate monitoring and possible measures. This time span may be only few days, which makes the time factor the most important following the scientific expertise.

When the Hot Line Network has been organized, a coordinator or coordination group will be established, while the WG-BME possibly could act as a link between the "Hot Line Network" and scientific/administative organisations (ICES, HELCOM etc).

If you feel that you would like to join the "Hot Line Network" or recommend someone to do so, please fill in the attached form and return it to the WG-BME chairman.

Experts and contacts are needed all around the Baltic Sea, covering all relevant subareas and coastal segments from the Skagerak to the Gulf of Bothnia.

Hoping to stimulate a fruitful cooperation

yours sincerely

(H.P.Hansen)

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"Baltic Environmental Hot Line Network"

Registration of membership

Please mail to: Hans Peter Hansen, Institute of Marine Research
Düsternbrooker Weg 20, D-2300 Kiel 1 (Germany)

I / we will participate in the "Baltic Environmental Hot Line Network" and act as contact(s) and local expert(s) for a Baltic coastal section/ subarea as indicated in the attached map.

Name	institute/adress	tel/fax/telex etc
Main contact		
(please add separate sheet if rqud.)		

I / we cover the disciplines /fields of research:

hydrography		microbiology	
hydrochemistry (nutrients etc)		benthos biology	
organic contaminants		fisheries res.	
trace elements		meteorology	
pelagic biology		Monitoring ,national or HELCOM-BMP	research
other (please specify)			

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Comments:

date/signature of main contact

ANNEX 4

RECOMMENDATIONS

Recommendation 1

On the Coordination of Investigations and Research

The changing political situations around the Baltic Sea and an increase in the number of international organisations have led to a large number of initiatives on cooperative research and investigations in the Baltic Sea area. Since there is a common interest in society to use the limited number of scientists and restricted budgets as effectively as possible, these projects should be more effectively coordinated in order to avoid unnecessary overlapping and parallel work.

The WGBME, therefore, recommends that its terms of reference should include the possibility to more actively propose how to coordinate different investigations and research projects planned for the Baltic Sea area.

After approval by ICES, any proposals should be forwarded to the scientific community of the ICES member states.

Recommendation 2

On the Permission for Research in Foreign Territorial Waters and Economic Zones

In association with the discussion on the inflow of saline water into the Baltic, the question about the right for research vessels to carry out investigations in the economic zones or territorial waters of other countries was discussed. It is well known that many efforts to facilitate the processing of applications, to shorten application deadlines, etc., have been made in the past, however with relatively little success.

Events such as the on-going salt water inflow into the Baltic basins, the occurrence of harmful and other algal blooms, sudden discharges of pollutants from leaking sources, etc., generally involve the marine waters of several countries, indicating the necessity of rapid action by scientists and ships from these and other countries to follow and map the situation.

The WGBME recommends that ICES again attempt to obtain more flexible rules for the access of research vessels to and the conduct of research work in the waters of Baltic Sea countries, at least in urgent cases such as those mentioned here, but preferably also for marine research in general.

Well understanding that most countries are not willing to open their sea areas completely for research by other countries, they could be encouraged to produce a list or a map of areas which should remain closed. Permission to use the open areas could be updated, e.g., once a year. The country making the application should prepare a detailed list of investigations planned or foreseen for the actual time frame, but in urgent cases, e.g., an upcoming plankton bloom, research should be allowed even without prior announcement. It should, however, be reported immediately.

Recommendation 3

The Working Group on the Baltic Marine Environment (Chairman Mr H.-P.Hansen) should meet from 27-29 April 1994 at a venue to be decided to conduct the following:

- a) review progress in quality assurance and inter-comparison/intercalibration of biological and chemical determinands;
- b) complete the organization of the Baltic Hot Line Network;
- c) review and assess Hot Line reports and other reported environmental events in the Baltic Sea;
- d) assess the effects of the 1993 salt water inflow to the Baltic;
- e) review progress in the Baltic Sediment Baseline Study;
- f) review the coordination of and plans for a combined coastal zone/open sea flux study in the Gulf of Finland and the Gotland Deep Project.