HELSINKI COMMISSION

Baltic Marine Environment Protection Commission

HELCOM PROGRAMME IMPLEMENTATION TASK FORCE
(HELCOM PITF)

THE BALTIC SEA JOINT COMPREHENSIVE ENVIRONMENTAL ACTION PROGRAMME
(JCP)

ANNUAL REPORT
1999

ANNUAL REPORT 1999

TABLE OF CONTENTS

Annex 1

Appendixes

Further information:
Mr. Ulrich Kremser, Secretary, Telephone +358-(0)9-6220 2223
e-mail: ulrich@helcom.fi
Ms. Leena Heikkilä, Assistant, Telephone +358(0)-9-6220 2222
e-mail: leena@helcom.fi

ANNUAL REPORT 1999 OF HELCOM PITF

I Introduction

The Baltic Sea Declaration[1)] was signed in Ronneby, Sweden, in 1990 by the Heads of Governments and High Political Representatives with the commitment to, *inter alia*, elaborate a Baltic Sea Joint Comprehensive Environmental Action Programme (JCP) to ensure the restoration of the Baltic Sea to an ecological sound balance and with the understanding to create a supportive tool for implementation of the Helsinki Convention which provides the overall legal framework for that Programme. A revised Convention should allow HELCOM to extend the work into the entire drainage basin of the Baltic Sea as a condition to address all pollution sources of relevant impact on the Baltic Sea and to solve the problem.

In the preparation process diverse participants were involved comprising Contracting and Non-Contracting Parties to the Convention, international financial institutions (IFIs), governmental and non-governmental organizations. It was this partnership of co-operating parties that has been a key to the success achieved to date in the Programme.

The Diplomatic Conference (Helsinki, Finland, 1992) approved the 20-year programme of action, the JCP[2)], which anticipated phased investment throughout the region with regard to its strategic approach and the principles for setting priorities. The strategic approach is based on identification of pollution sources within the entire catchment area of the Baltic Sea and implementation of measures for decisive reduction of emissions and discharges of nutrients and other harmful substances affecting the Baltic Sea. Priorities are set with respect to amount of pollution load generated by source and entering the Baltic Sea, and taking into account different problems in different areas.

To ensure the implementation of that approach the Programme covers all key sectors concerned. It consists of six components and should be implemented in a time span of 20 years. The investments needed for prevention and curative actions, as estimated in 1991/1992, amount to 18 billion ECU.

The six components are:

- Policies, Laws and Regulations
- Institutional Strengthening and Human Resource Development
- Investment Activities
  Point-source pollution from municipal and industrial sources
  Non-point source pollution from agriculture, rural settlements and transportation
- Management Programmes for Coastal Lagoons and Wetlands
- Applied Research
- Public Awareness and Environmental Education.

Within this framework for environmental management both preventive and curative measures are emphasized. The investment is understood to support the realization of this framework.

As it became evident already in the JCP drafting process that one of the major constraints to implement the Programme would be the mobilization of financial resources, the 1992 Diplomatic Conference requested the continued partnership of the four IFIs to facilitate funding of the Programme and called for a special conference for mobilizing local, national, bilateral and international financial resources to implement the JCP. In March 1993 an International High Level Conference on Resources Mobilization was held in Gdansk, Poland. The Conference adopted the Gdansk Declaration which called for all efforts to secure financing the implementation of the JCP (Helsinki Commission, Baltic Sea Environment Proceedings No. 47, 1993).

---

1) Helsinki Commission; Intergovernmental Activities in the framework of the Helsinki Convention 1974-1994, Baltic Sea Environment Proceedings No. 56, Helsinki 1994

2) Helsinki Commission; The Baltic Sea Joint Comprehensive Environmental Action Programme; Baltic Sea Environment Proceedings No. 48, Helsinki 1993

The HELCOM Programme Implementation Task Force (HELCOM PITF) was established by the Diplomatic Conference in 1992 to initiate, facilitate and monitor co-ordination of the implementation of the JCP and to periodically update the Programme.

As mentioned above HELCOM PITF Members and Observers consist of different types of parties and organizations, the partnership and co-operation of which made the success possible. In detail the partners are listed in Table 1.

Table 1: Participants in the Programme Implementation Task Force

Contracting Parties and Co-operating Governments *)	**Other Parties**
Belarus Czech Republic **Denmark** **Estonia** **European Community** **Finland** **Germany** **Latvia** **Lithuania** **Poland** Norway Slovak Republic **Sweden** **Russian Federation** Ukraine	Regional Intergovernmental Organizations: - International Baltic Sea Fishery Commission (IBSFC) International Financial Institutions: - Council of Europe Development Bank - European Bank for Reconstruction and Development (EBRD) - European Investment Bank (EIB) - Nordic Investment Bank (NIB) - Nordic Environment Finance Corporation (NEFCO) - World Bank Group Non-governmental Organizations: - Coalition Clean Baltic (CCB) - Standing Conference of Rectors, Presidents and Vice-Chancellors of the European Universities (CRE) - European Union for Coastal Conservation (EUCC) - International Council for Local Environmental Initiatives (ICLEI) - International Network for Environment Management (INEM) - Union of Baltic Cities (UBC) - World Wide Fund for Nature (WWF)

*) Contracting Parties to the Helsinki Convention are in "**bold**" text

Such a comprehensive membership makes HELCOM PITF very flexible and safeguards the feedback between basic work on different levels and HELCOM PITF.

At the Baltic Sea States Summit (Visby, Sweden, 1996), the Heads of Governments expressed the opinion that HELCOM and the JCP have a central role to play within the framework of the Baltic Agenda 21[3)] and that the JCP should be updated and strengthened and the pace of implementation accelerated.

At HELCOM PITF 9 (2-4 October 1996, Hel, Poland) a project on updating and strengthening of the JCP had been established to identify deficiencies and shortcomings in the implementation process of the Programme and to make proposals on how to adjust the JCP to the changed political, economical, environmental and other conditions.

The Project on Updating and Strengthening of the JCP was finalized in February 1998 and the Special Meeting of HELCOM PITF (February 1998) adopted the final report "Recommendations for Updating and Strengthening". The Recommendations and background document were forwarded to HELCOM 19 in March 1998 and the Ministers of Environment endorsed the "Recommendations for Updating and Strengthening of the JCP" for implementation. HELCOM PITF 12/98 and HELCOM PITF 13/98 considered proposed actions on how to implement the Recommendations.

[3)] Baltic Sea States Summit, Presidency Declaration - Visby, Visby, Sweden 1996

Additionally the Commission decided to undertake a review of the HELCOM activities and that recommendations of HELCOM institutional framework shall be submitted for examination and resolution by HELCOM 20 in 1999 (see Chapter V: HELCOM Review and PITF).

This Annual Report will provide an overview of the work done during 1999. Information[4), 5)] analysing the situation and drawing conclusions was published before the Visby Summit. These figures and thoughts expressed there have mostly not become outdated. The assessment of the present status of implementation based on Lead Party Reports and other information by the members and observers of HELCOM PITF will be the main focus of this Report.

II Infrastructure for JCP implementation

The long-term Programme of specific actions is grouped into six components (Table 2). The component "Investment activities" is a central one regarding financing actions required. This component is divided into point-source pollution and non-point source pollution (pollution from diffuse sources). An infrastructure has been established through Lead Parties which undertake the responsibility to co-ordinate the implementation of the individual component or element.

Table 2: Infrastructure of JCP Programme Elements (the numbered elements are based on Table 5-1 in [2])

	PROGRAMME ELEMENT	STRUCTURE OF ACTIVITIES		
		Lead Party	Working Group	Project
1	Policies, Laws and Regulations	Germany		
2	Institutional Strengthening and Human Resources Development	Germany/UBC/INEM		
3	Investment Activities			
A	Point Source Pollution			
	- Combined Municipal and Industrial Wastewater Treatment	Sweden		
	- Industrial Pollution Control	Finland		
B	Non-Point Source Pollution			
	- Agriculture	Poland[1)] / Germany[2)]	established in November 99	closed in May 99
	Transport	Germany		working
4	Management Programmes for Coastal Lagoons and Wetlands	WWF	dissolved in November 99	established in November 99
5	Applied Research	Sweden and Latvia		
6	Public Awareness and Environmental Education	Finland	dissolved in November 99	

1) Poland until PITF 14/99 in May 1999
2) Germany since PITF 14/99 in May 1999

4) Baltic Sea States Summit, Visby, Sweden, 3-4 May 1996, The Baltic Sea Environment, Reports from the Baltic Marine Environment Protection Commission, The State of the Baltic Sea Marine Environment

5) Baltic Sea States Summit, Visby, Sweden, 3-4 May 1996, The Baltic Sea Environment, Reports from the Baltic Marine Environment Protection Commission, Protection of the Baltic Sea - results and experiences

The approach within the different elements differs: There are Lead Parties organizing the work by direct contact with the members via the contact persons, permanent Working Groups using the possibility to discuss and propose different actions at meetings convened, and projects. Table 2 shows the structure of activities.

Table 3: Internal structure of Working Groups and Projects within HELCOM PITF (status 1999)

Element No.	Name of WG or Project	Planned duration	Name of the Chairman or Project Manager	Project Secretary or Lead Party's responsible person
3	Project on Agriculture	1996-2002	Mr. Jacek Mizak[3)], Poland	Mr. Jacek Mizak[a)], Poland
	-Working Group on Agriculture	2000-2002	to be determined	Mr. Uwe Volkgenannt[a)], Germany
	Project on Transport	1999-2000	Mr. Norbert Gorissen[3)], Germany	Ms. Christiane Jasper[a)], Germany
4	WG on Management Plans for Coastal Lagoons and Wetlands (HELCOM PITF MLW) until November 99		Mr. Anders Tarand[1)], Estonia, Mr. Eugeniusz Andrulewicz[2)], Poland	Mr. Lennart Gladh[b)], WWF, Sweden
	Project on MLW	2000-2004	Mr. Henrik Dissing[3)]	Mr. Lennart Gladh[a)], WWF, Sweden
6	WG on Public Awareness and Environmental Education (HELCOM PITF PA&EE) until November 99		Ms. Marjut Hertell[1)], Finland Mr. Raimonds Ernsteins[2)], Latvia	Ms. Ulla Sonck[b)], Finland

[1)] Chairman ,[2)] Co-/Vice-Chairman, [3)] Project Manager
[a)] Project Secretary, [b)] Lead Party's responsible person

Table 4: Meetings of HELCOM PITF and its subsidiary bodies in 1999

HELCOM PITF Project on Transport (Workshop)	Stockholm, Sweden, 3-4 March 1999
HELCOM PITF/TC Project on Agriculture 7/99	Goslar, Germany, 4-6 March 1999
HELCOM PITF/Agriculture Analysis Group (AAG)	Copenhagen, Denmark, 12 March 1999
HELCOM PITF 14/99	Helsinki, Finland, 18-19 May 1999
HELCOM PITF MLW 11/99	Brussels, Belgium, 27-28 September 1999
HELCOM PITF Lead Party Meeting on Agriculture	Berlin, Germany, 4-5 October 1999
HELCOM PITF PA&EE 11/99	Stockholm, Sweden, 18-19 October 1999
HELCOM PITF 15/99	Bad Kreuznach, Germany, 8-10 November 1999

III Co-ordination and co-operation with other programmes, donors and organizations

HELCOM PITF Members and Observers actively promote JCP implementation. Assistance for implementing the JCP has also been rendered by a variety of other countries and organizations. Of these France, US AID, the Harvard Institute for International Development (HIID) and the International Finance Corporation (IFC) have explicitly offered to co-ordinate their assistance with JCP implementation.

The Ministers of Environment of the Baltic Sea Region (BSR) decided at their informal meeting in Saltsjöbaden in October 1996 to develop an Agenda 21 for the Baltic Sea Region, as requested by the Heads of the Governments of the region in Visby in May 1996. One contribution to the development of an Agenda 21 for the Baltic Sea Region was the updating and strengthening of the JCP which was finalized in February 1998.

At HELCOM 19/98 the Environment Ministers endorsed the “Recommendations for Updating and Strengthening” for implementation. Agriculture, transport and public awareness are issues both HELCOM and Baltic 21 are dealing with. HELCOM was involved with the preparation of the Baltic Agenda 21 action programme and had taken the lead together with Sweden regarding the agriculture sector. The sector report on agriculture which is summarizing that work, has been published in the BSEP Series (BSEP No. 74).

Since 1998 HELCOM has together with Poland been a Co-Lead Party for implementing the Baltic 21 Action Programme, sector agriculture.

A GEF/Baltic Sea Regional Project, which will be administrated and co-ordinated by HELCOM together with ICES and IBSFC, will support the implementation of the JCP and the Helsinki Convention. The preparation phase has already started.

At PITF 15/99 the UNEP/GPA Coordination Office The Hague (The Netherlands) on the Global Programme of Action (GPA) on the Protection of the Marine Environment from Land-Based Activities stated the wish to co-operate with HELCOM regarding

- adapting HELCOM website to the GPA clearing house
- inviting HELCOM to arrange for "twinning" with a less developed region
- inviting HELCOM to actively represent the Baltic Sea region in a global conference on sewage issues which is planned for the year 2000.

Following the “Recommendations for Updating and Strengthening of the JCP”, the resource mobilization activities of HELCOM PITF should continue to be co-ordinated with the Project Preparatory Committee (PPC) to facilitate the effective and timely matching of domestic resources, loans, and grants to support the preparation and implementation of projects on an accelerated basis. The PPC will support the Programme element "Investment Activities" by organizing regional meetings.

IV Status of JCP implementation

1. Policies, laws and regulations
(*Lead Party Germany)*

This Programme element was thought to focus on policy and regulatory activities, aiming at the establishment of a long-term environmental framework in all Baltic Sea States. One of the major aspects concerns legal arrangements as a background for investment activities in the environmental sector.

Due to the findings of the "Recommendations for Updating and Strengthening of the JCP" the Lead Party Germany has tried to analyze the real needs of the countries concerned to facilitate effective support and assistance from potential donors or third parties. As a result it can be stated that the background for investment activities seems to be prepared in almost all countries.

By that the main purpose of the implementation of that Programme element has been achieved. This evaluation was shared by the HELCOM Review Steering Group. Following its recommendations and the decisions taken by HELCOM EXTRA 99 the remaining aspects of Programme element 1 can in the future be dealt with by co-operation between Observer Organizations and the Secretariat. Nevertheless, the Lead Party maintains its responsibility backing up the Secretariat's work.

Due to the increasing importance of transboundary water management, Germany together with the World Bank and Lithuania hosted a Round Table meeting in Vilnius at the beginning of June 1999. Bringing together experts from all over the Baltic Sea region the Round Table resulted in an exchange of experiences in that field. Representatives from, *e.g.*, ECE Water Convention, European Commission, Lake Peipsi/Chudskoe Ozero Project, Neva-Ladoga Basin Water Management Administration, Odra River Co-operation, Daugava River and Lielupe River Co-operation, Nemunas River and Kursiu Lagoon Co-operation, and Vistula Lagoon and Bug River Co-operation contributed to the discussions.

As a basis for further development in that field the Vilnius Recommendations have been formulated.

2. Institutional strengthening and human resources development

(*Lead Parties Germany, UBC and INEM*)

This Programme element focuses at creating the organizational and human capacities which are needed to develop effective management systems for operating pollution control measures.

Taking into account the "Recommendations for Updating and Strengthening of the JCP" the Lead Party Germany aimed at analyzing the real needs of the countries concerned. The analysis lead to the result that the necessary arrangements have been finalized. In line with the findings of the HELCOM Review Steering Group this Programme element does no longer need to be dealt with permanently. The underlying aspects will in the future be observed by co-operating Observer Organizations and the Secretariat. Nevertheless, the Lead Parties are still prepared to assist.

3. Investment activities

(Prepared by Soil & Water Ltd)

3.1 GENERAL OVERVIEW

In the JCP special attention is drawn to investment activities concerning point-source pollution and non-point source pollution, which is reflected, *inter alia*, by the estimated costs of more than 17 billion ECU for implementation of proposed measures. Originally 132 Hot Spots were identified within the catchment area of the Baltic Sea (cf. pages 9-13). The investments needed for the Hot spots were estimated to approximately 10 billion ECU in 1992.

By its Terms of Reference HELCOM PITF is committed to prepare an annual report including a review of ongoing investment activities. This review "Activity Inventory" is based on answers to the Questionnaire on Status of Hot Spots in the Countries. The Seventh Activity Inventory is incorporated into this “Annual Report 1999" and contained in this Chapter IV "Status of JCP Implementation", sub-chapter 3.1 on Programme element 3. The informative Tables of the Seventh Activity Inventory are attached as Annex 1 to this Annual Report (pp. 35-110).

Tables

Table 1 Activity at the Hot Spots
Table 2 Estimated costs and allocated/reserved resources
Table 3 Number of Hot Spots and the status of information received
Table 4 Updated information not received
Table 5 Removed Hot Spots
Table 6 Inventory table on Hot Spots
Table 7 Waste water discharges from reported Hot Spots
Table 8 Air emissions from reported Hot Spots
Table 9 Inventory table on waste water discharges and air emissions
Table 10 Activity at the Hot Spots by country
Table 11 Activity at the Hot Spots by site type
Table 12 Activity at the Hot Spots and inventory table on investments

The figures reflecting the information in the Tables are shown in this general overview instead.

The following paragraphs give a short explanation of the Tables in Annex 1.

3.1.1 INTRODUCTION

Data in the Seventh Activity Inventory is primarily based on additional and updated information received through answers to a questionnaire distributed by the HELCOM Secretariat to the Contact Persons of the HELCOM PITF in July 1999 and on earlier similar activity inventories. The questions of the Seventh Activity Inventory concerned discharges and emissions, the status of measures taken or planned, expected actions, technical assistance and investments to implement the Action Programme (JCP). The main scope of the questions was the same as in earlier inventories, but somewhat more information had been included regarding the costs of technical assistance (TA) and investments.

Information on the remaining 115 Hot Spots was received from 91 Hot Spots (79%) of which 37 are Priority Hot Spots. The status of Hot Spots activity is shown in Figure 1.

In addition to the ordinary questionnaire response information, also other sources of information have been used in order to

- check and verify the reliability of data received
- complete the information through the use of other sources where no information has been received with replies to the questionnaire.

Additional information sources included but were not limited to the following studies:

- Hot Spot Review by Krüger Consult AS, Cowiconsult AS, Carl Bro Environment a/s and Vandkvalitetsinstituttet for the Danish EPA in November 1994 (including the information for 47 priority Hot Spots)

- Lead Party Report on Combined Municipal and Industrial Discharges by VAI VA-Project AB for the Swedish EPA in February 1999

- Annual Statistics of the Swedish EPA regarding the discharges and emissions of the pulp and paper industry for the years 1991, 1995, 1996 and 1999

- Annual Statistics of the Finnish Forest Industry Federation regarding the discharges and emissions of the pulp and paper industry for the years 1991, 1995, 1997 and 1998

In order to maintain the comparability of 1991, 1995, 1997 and 1998 loading data the information on removed Hot Spots has also been included in the 1998 follow-up.

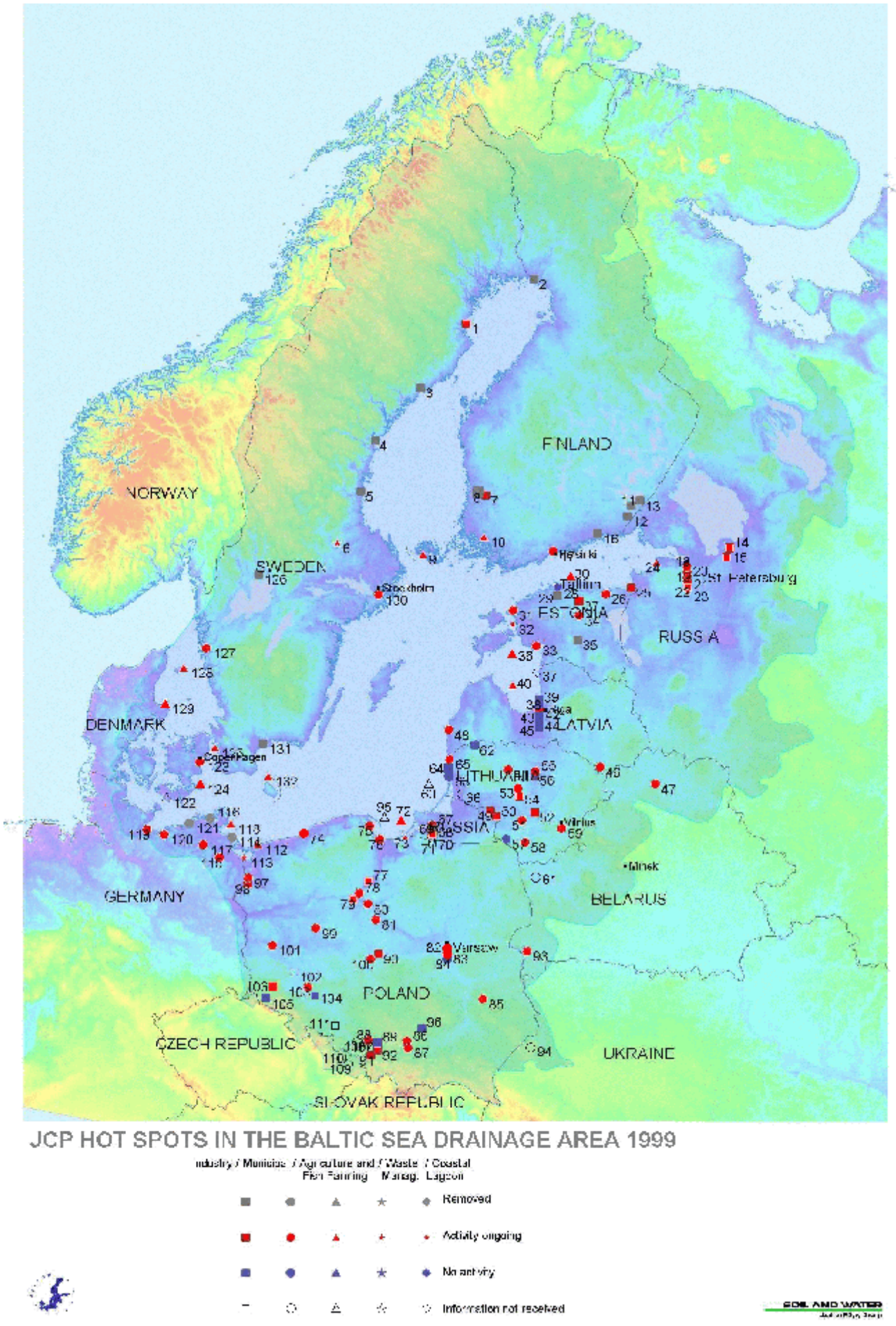


Figure 1 JCP Hot Spots in the Baltic Sea Drainage Area, 1999

List of Hot Spots in the Baltic Sea catchment area
(the shadowed lines indicate the Hot spots deleted from the list)

Key	*Priority Hot Spots*	*Location*	*Country*	*Site name*	*Site type*
Bothnian Bay					
1		Bothnian Bay	Sweden	Rönnskärsverken	Industry (Metal Smelter)
2		Bothnian Bay	Finland	Metsä - Botnia Oy Kemi	Industry (Pulp & Paper)
Bothnian Sea					
3		Bothnian Sea	Sweden	Husum Kraft Mill (1)	Industry (Pulp & Paper)
4		Bothnian Sea	Sweden	Östrand (1)	Industry (Pulp & Paper)
5		Bothnian Sea	Sweden	Vallvik (1)	Industry (Pulp & Paper)
6		Dalälven River	Sweden	Dalälven	Mining Waste
7		Bothnian Sea	Finland	Outokumpu Group Harjavalta	Industry (Metal Smelter)
8		Bothnian Sea	Finland	Kemira Oy Vuorikemia	Industry (Titanium oxide)
Archipelago and Åland Seas					
9		Arch & Åland Seas	Finland	Fish Farming	Fish Farming
10		Archipelago Sea	Finland	Agriculture (2)	Agricultural Runoff
Neva River Basin / Lake Ladoga					
11		Lake Saimaa	Finland	YPT Joutseno	Industry (Pulp & Paper)
12		Lake Saimaa	Finland	Kaukas Lappeenranta	Industry (Pulp & Paper)
13		Lake Saimaa	Finland	E-G Kaukopää	Industry (Pulp & Paper)
14		Lake Ladoga	Russia	Syasstroi	Industry (Pulp & Paper)
15		Lake Ladoga	Russia	Volkhov	Industry (Aluminum)
Gulf of Finland					
16		Gulf of Finland	Finland	Sunila Oy - Kotka	Industry (Pulp & Paper)
17		Gulf of Finland	Finland	Helsinki Region	Municipal
18	X	Gulf of Finland	Russia	St. Petersburg	Connection Sewers
19	X	Gulf of Finland	Russia	St. Petersburg (Urban) (3)	Municipal & Industrial
20	X	Gulf of Finland	Russia	St. Petersburg (Suburban)	Municipal & Industrial
21		Gulf of Finland	Russia	St. Petersburg	Phosphorous Removal
22		Gulf of Finland	Russia	St. Petersburg	Industry (Metal Plating)
23		Gulf of Finland	Russia	St. Petersburg	Hazardous Waste
24	X	Gulf of Finland	Russia	St. Petersburg Region	Large Livestock Farms
25	X	Gulf of Finland	Estonia	Narva	Power Plants (Oil Shale)

Key	*Priority Hot Spots*	*Location*	*Country*	*Site name*	*Site type*
26		Gulf of Finland	Estonia	Kohtla Järve	Area Municipal & Industrial
27		Gulf of Finland	Estonia	Kehra	Industry (Pulp & Paper)
28	X	Gulf of Finland	Estonia	Tallinn	Municipal & Industrial
29		Gulf of Finland	Estonia	Tallinn	Industry (Pulp & Paper)
30		Gulf of Finland	Estonia	Gulf of Finland	Agricultural Runoff Programme
Western Estonian Coast					
31		Estonian Coast	Estonia	Haapsalu	Municipal & Industrial
32	X	Estonian Coast	Estonia	Matsalu Bay	Management Programme
Gulf of Riga / Daugava River Basin					
33	X	Gulf of Riga	Estonia	Pärnu	Municipal & Industrial
34		Gulf of Riga	Estonia	Paide	Municipal & Industrial
35		Gulf of Riga	Estonia	Vohma Meat Combine	Industry
36		Gulf of Riga	Estonia	Gulf of Riga	Agricultural Runoff Programme
37	X	Gulf of Riga	Estonia/La	Gulf of Riga Mgt	Management Programme
38	X	Gulf of Riga	Latvia	Sloka	Industry (Pulp & Paper)
39	X	Gulf of Riga	Latvia	Latbiofarm	Industry (Pharmaceutical)
40	X	Gulf of Riga	Latvia	Agriculture / Livestock	Agricultural Runoff Programme
41	X	Gulf of Riga	Lithuania	Siauliai	Municipal & Industrial
42	X	Daugava RB	Latvia	Riga (WWTP Phase II)	Municipal & Industrial
43		Daugava RB	Latvia	VEF Plant (Riga)	Industry (Metals)
44		Daugava RB	Latvia	RER Plant (Riga)	Industry (Metals)
45		Daugava RB	Latvia	Riga	Industry (Various)
46	X	Daugava RB	Latvia	Daugavpils	Municipal & Industrial
47		Daugava RB	Belarus	to be determined	to be determined
Latvian Coast					
48	X	Latvian Coast	Latvia	Liepaja (3)	Municipal & Industrial
Nemunas River Basin					
49	X	Nemunas RB	Russia	Sovetsk	Industry (Pulp & Paper)
50	X	Nemunas RB	Russia	Neman	Industry (Pulp & Paper)
51	X	Nemunas RB	Lithuania	Kaunas	Municipal & Industrial
52		Nemunas RB	Lithuania	Amalg Azotaz	Industry (Fertilizer)

Key	*Priority Hot Spots*	*Location*	*Country*	*Site name*	*Site type*
53		Nemunas RB	Lithuania	Kedainiai	Municipal & Industrial
54		Nemunas RB	Lithuania	Kedainiai	Industry (Chemicals)
55		Nemunas RB	Lithuania	Panevezys	Municipal & Industrial
56		Nemunas RB	Lithuania	Panevezys	Industry (Food)
57		Nemunas RB	Lithuania	Marijampole	Municipal & Industrial
58		Nemunas RB	Lithuania	Alytus	Municipal & Industrial
59	X	Nemunas RB	Lithuania	Vilnius / Grigiskes	Municipal & Industrial
60	X	Nemunas RB	Lithuania	Agriculture / Livestock	Agricultural Runoff Programme
61		Nemunas RB	Belarus	Grodno	Municipal & Industrial
Lithuanian Coast					
62		Lith. Coast	Lithuania	Mazeikiai	Oil Refinery / Marine Terminal
63	X	Lith. Coast	Lithuania	Klaipeda	Municipal & Industrial
64		Lith. Coast	Lithuania	Cardboard Factory	Industry (Paper)
65		Lith. Coast	Lithuania	Palanga	Municipal
Lithuanian / Kaliningrad Coast					
66	X	Lith/Kal Coast	Lith/Russia	Kursiu Lagoon	Management Programme
Kaliningrad					
67	X	Kaliningrad	Russia	Kaliningrad	Municipal & Industrial
68		Kaliningrad	Russia	Pulp & Paper No 1	Industry (Pulp & Paper)
69		Kaliningrad	Russia	Pulp & Paper No 2 (4)	Industry (Pulp & Paper)
70		Kaliningrad	Russia	Kaliningrad	Hazardous Waste
71		Kaliningrad	Russia	Oil Bunkering Station	Industry
72		Kaliningrad	Russia	Agriculture / Livestock	Agricultural Runoff Programme
Kaliningrad / Polish Coast					
73	X	Kal/Pol Coast	Russia/Pol	Vistula Lagoon	Management Programme
Vistula River Basin / Baltic Coast of Poland					
74	X	Baltic Coast	Poland	Kozalin	Municipal & Industrial
75	X	Baltic Coast	Poland	Gdynia - Debogorze	Municipal & Industrial
76	X	Baltic Coast	Poland	Gdansk - Wschod	Municipal & Industrial
77		Vistula	Poland	Swiecie	Industry (Pulp & Paper)
78	X	Vistula	Poland	Bydgoszcz - Fordon	Municipal & Industrial
79		Vistula	Poland	Bydgoszcz - Kapusciska	Industry (Chemical)

Key	*Priority Hot Spots*	*Location*	*Country*	*Site name*	*Site type*
80	X	Vistula	Poland	Torun	Municipal & Industrial
81	X	Vistula	Poland	Wloclawek	Municipal & Industrial
82		Vistula	Poland	Warsaw - Czajka	Municipal & Industrial
83	X	Vistula	Poland	Warsaw - Siekierki	Municipal & Industrial
84		Vistula	Poland	Warsaw - Pancerz	Municipal & Industrial
85		Vistula	Poland	Lublin - Hajdow	Municipal & Industrial
86	X	Vistula	Poland	Krakow - Plaszow	Municipal & Industrial
87	X	Vistula	Poland	Krakow - Kujawy	Municipal & Industrial
88	X	Vistula	Poland	Katowice -East (6)	Municipal & Industrial
89		Vistula	Poland	Jaworzno Organico Azot	Industry (Chemical)
90		Vistula	Poland	Zgierz - Boruta Dyestuffs	Industry (Chemical)
91		Vistula	Poland	Oswiecim - ZCHO Chem.	Industry (Chemical)
92		Vistula	Poland	Zaklady Gorniczo	Industry (Metals)
93		Vistula	Belarus	Brest	Municipal & Industrial
94	X	Vistula	Ukraine	Lvov	Municipal & Industrial
95	X	Vistula	Poland	Agriculture / Livestock	Agricultural Runoff Programme
96		Vistula	Poland	Upper Basin (7)	Salt Control
Oder-Odra River Basin					
97	X	Oder / Odra	Poland	Szczecin	Municipal & Industrial
98	X	Oder / Odra	Poland	Szczecin	Industry (Fert,Food,P&P)
99		Oder / Odra	Poland	Poznan	Municipal & Industrial
100	X	Oder / Odra	Poland	Lodz	Municipal & Industrial
101		Oder / Odra	Poland	Zielona Gora	Municipal & Industrial
102	X	Oder / Odra	Poland	Legnica-Glogow	Industry (N-Fer, Cu, Food)
103		Oder / Odra	Poland	Wroclaw	Municipal & Industrial
104		Oder / Odra	Poland	Wroclaw	Industry (Chem,Food,Textiles)
105		Oder / Odra	Poland	Ubocz - Luban	Industry (Fertilizer)
106		Oder / Odra	Poland	Boleslawiec	Industry (Fertilizer)
107	X	Oder / Odra	Poland	Katowice-West	Municipal & Industrial
108	X	Oder / Odra	Poland	Katowice-West	Industry (Coke,Sid,Fert)
109	X	Oder / Odra	CSFR	Ostrava	Municipal & Industrial
110	X	Oder / Odra	CSFR	Ostrava Area	Industry (Chem,P&P, etc.)

Key	*Priority Hot Spots*	*Location*	*Country*	*Site name*	*Site type*
111		Oder / Odra	CSFR/Poland	Upper Basin (7)	Salt Control
112	X	Oder / Odra	Poland	Agriculture / Livestock	Agricultural Runoff Programme
113	X	Oder / Odra	Poland/Ger	Odra Lagoon mgt	Management Programme
Arkona Basin					
114		Arkona Basin	Germany	Greifswald	Municipal & Industrial
115		Arkona Basin	Germany	Neubrandenburg	Municipal & Industrial
116		Arkona Basin	Germany	Stralsund	Municipal & Industrial
117		Arkona Basin	Germany	Stavenhagen - Malchin	Municipal & Industrial
118		Arkona Basin	Germany	Agriculture	Agricultural Runoff Programme
Belt Sea					
119		Belt Sea	Germany	Lübeck	Municipal & Industrial
120		Belt Sea	Germany	Wismar	Municipal & Industrial
121		Belt Sea	Germany	Rostock	Municipal & Industrial
122		Belt Sea	Denmark	Agriculture (8)	Agricultural Runoff Programme
The Sound					
123		The Sound	Denmark	Copenhagen	Municipal
124		The Sound	Denmark	Agriculture (8)	Agricultural Runoff Programme
125		The Sound	Sweden	Agriculture	Agricultural Runoff Programme
Kattegat					
126		Göta älv River	Sweden	Skoghall	Industry (Pulp & Paper)
127		Kattegat	Sweden	Göteborg	Municipal
128		Kattegat	Sweden	Agriculture	Agricultural Runoff Programme
129		Kattegat	Denmark	Agriculture (8)	Agricultural Runoff Programme
Swedish Coast					
130		Swedish Coast	Sweden	Stockholm	Municipal
Bornholm Basin					
131		Bornholm Basin	Sweden	Nymölla	Industry (Pulp & Paper)
132		Bornholm Basin	Sweden	Agriculture	Agricultural Runoff Programme

3.1.2 SUMMARY INFORMATION AND THE STATUS OF INFORMATION RECEIVED

A summary of the status of environmental projects in the Hot Spots and Priority Hot Spots is presented in Table 1a. Tables 1b and 1c inform about their status by sector (site type) and by country. Technical assistance is going on in 63 % of the Hot Spots and ongoing investments were reported for 50 % of the Hot Spots.

A summary of estimated costs in the 1992 JCP, updated estimates in 1999 (most recent available estimates), allocated or reserved resources and remaining TA/investment costs is shown in Table 2a by Hot Spots and Priority Hot Spots. Tables 2b and 2c specify them by country and by sector. According to the information received 20% (EUR 1,46 billion) of the estimated TA/investment costs for the remaining 115 Hot Spots are allocated or reserved. The new estimate of total costs EUR 7,35 billion is based on the answers to the questionnaire for this Inventory. The new estimate is lower than the original estimate EUR 9,43 billion of the Joint Comprehensive Environmental Action Programme issued in 1992. The new estimate is lower partly because the investment estimates are now more accurate and partly also because a number of Hot Spot investment programmes have been completed and the Hot Spots have been deleted from the list. An additional reason is also that in many cases countries have reported the remaining needed TA/investment costs from the present moment (or present ongoing TA/investments and future TA/investments) instead of the total TA/investment costs from the year 1992. The allocated/reserved TA/investment costs for Priority Hot Spots amount to about 12% of the total needed costs for Priority Hot Spots.

The allocation of the resources has been fastest in the waste water treatment, the municipal, and coastal lagoons sectors where 57 %, 32 % and 29% of the TA/investment needed is reported to be allocated. For the industrial sector the percentage is 15% and for the agricultural sector 0%. The 0% in the agricultural sector does not reflect the real situation of allocation of resources. Only in a few cases figures for fund-use in agricultural hot spots were given. In the majority of cases the fund-use figures concerned agricultural environmental programmes, where the expenditures are very high compared to needed funds in the Hot Spots.

In the industrial sector progress has been better than could have been expected, based on the allocation of resources in this sector (especially concerning wastewater discharges). Waste water discharges have reduced by 55% to 83% between 1992 and 1998. The reported allocated resources have been only 15% of the estimated fund needs. This may indicate a good efficiency of investments and that less financing would be required for the completion of the Programme than originally anticipated. Some industrial operations have been shut down, and consequently they have also required less financing than originally estimated. Factories which have stopped production or have reduced production considerably are, *e.g.*, Hot Spots Nos 38 and 64.

In the municipal sector the results of wastewater-discharge reduction have been moderate compared to the allocated resources. The reduction of waste water emissions have been from 26% to 56% and 32% of the estimated needed funds have been reported to be allocated. There has been no reduction reported in discharges in air emissions in the municipal sector.

In the agricultural sector neither allocation of resources nor emissions have been reported in a consistent manner and no conclusions on efficiency can be drawn. Difficulties in resource use reporting in agriculture sector have been considered already above. Very few emission figures were available and most of the figures are from the year 1992.

In waste treatment sector there are only three Hot Spots. Only one of them has reported emissions (N and P). 59% of needed funds have been reported to be allocated. There seems to be no reduction in nitrogen nor phosphorus emissions.

In total EUR 1,46 billion has been reserved or allocated. In addition to this about EUR 410 (Mill) has been invested in the removed Hot Spots.

Table 3 indicates the amount of information received for the Seventh Activity Inventory. Information was not received for 24 Hot Spots. They are listed in Table 4. The removed Hot Spots and the achieved reduction of emissions/reason for removal are presented in Table 5.

3.1.3 PRESENTATION OF HOT SPOTS

An overview on Hot Spots is presented in Table 6. The information specifies the receiving water body, the type of Hot Spot (sector), the aim of activities, and measures proposed in the Hot Spot. The last column indicates the year in which information was received. The location of the Hot Spots and status of the activity are shown in Figure 1 "JCP Hot Spots in the Baltic Sea drainage area 1999".

3.1.4 DISCHARGES AND EMISSIONS

Total waste water discharges and air emissions from Hot Spots in the years 1991, 1994, 1995, 1997 and 1998 are shown in Tables 7, 8 and 9 a-g. The possible incompleteness has been corrected by assuming that

- if 1991 loadings are missing, they have been estimated to be at least the same as loadings of 1994/1995,
- if 1995 figures have not been reported they have been assumed to be at least at the 1994 level or ultimately at the 1991 level,
- if 1997 figures have not been reported they have been assumed to be at the 1995 level,
- if 1998 figures have not been reported they have been assumed to be at the 1997 level.

With this manner the impact on the development of loadings from these sources on the total loadings is neutral rather than over- or underestimating the changes.

With some Hot Spots there is loading data available, but is so inconsistent between the data from different years that it has not been included in the final loading tables. Information cannot be used from the following Hot Spots: 18-24 (except phosphorus emissions in Hot Spots 18-21) and 112. The sources of St. Petersburg area (except phosphorus in Hot Spots 18-21) and one agricultural source have not been included in the final list for the reason mentioned above. Adequate loading information is missing from the Hot Spots 36, 45, 60, 70, 72, 95, 96, 111, 119, 124 and 129. The majority of these Hot Spots are agricultural hot spots. Consequently no loading information is included in the reporting on these Hot Spots.

Emissions of the coastal lagoon hot spots have been analyzed separately from the emissions of the other sectors. The reason for this is that the estimated emissions to coastal lagoon hot spots also include emissions of the other hot spots. *E.g.*, the loading figures to Hot Spot 37, Gulf of Riga Mgt, include all the loading from Daugava River which includes loading from Riga (Hot Spots 42, 43, 44 and 45), and loading figures of Hot Spot 66, Kursiu Lagoon, include loading from Nemunas River, which receives emissions from 13 different hot spots. Reporting from the year 1992 has included all the incoming emissions to the coastal lagoon hot spots. Coastal lagoons are included in the List of Hot Spots "if the potential qualities of the area are considered to be substantial in terms of biodiversity and landscape, natural resources for human use, and/or the area plays an important role as a buffer for pollution loads and variations in the hydrological cycle, but these aspects are now in a state of deterioration".[6] Typically coastal lagoon hot spots do not produce much pollution emissions. The pollution comes through rivers and air from industries and municipalities as well as agricultural sources close to coast. Coastal lagoon hot spots are by nature not important sources of pollution but there were other reasons for including them into the List of Hot Spots. However, it is worth monitoring and reporting on the incoming loading into the coastal lagoons. Therefore, the figures and sums in the tables are given with and without loads into the lagoons.

BOD_5, COD, phosphorus, nitrogen and AOX from all hot spots are shown in Tables 9a - 9e. From the year 1991 until the year 1998 the loading reductions, excluding coastal lagoons (Figure 2), have developed as follows (percentages in brackets are reduction figures if coastal lagoons would have been included in the analysis):

---

[6] HELCOM Programme Implementation Task Force (HELCOM PITF), Criteria for Inclusion and Deletion of Hot Spots: Procedures and Guidelines for Inclusion and Deletion of Hot Spots. 21 May 1999.

- BOD_5 has been reduced by 60 % (45 %)
- COD has been reduced by 39 % (36 %)
- Total phosphorus has been reduced by 39 % (35 %)
- Total nitrogen has decreased by 28 % (29 %)
- AOX has decreased by 69 % (69 %).

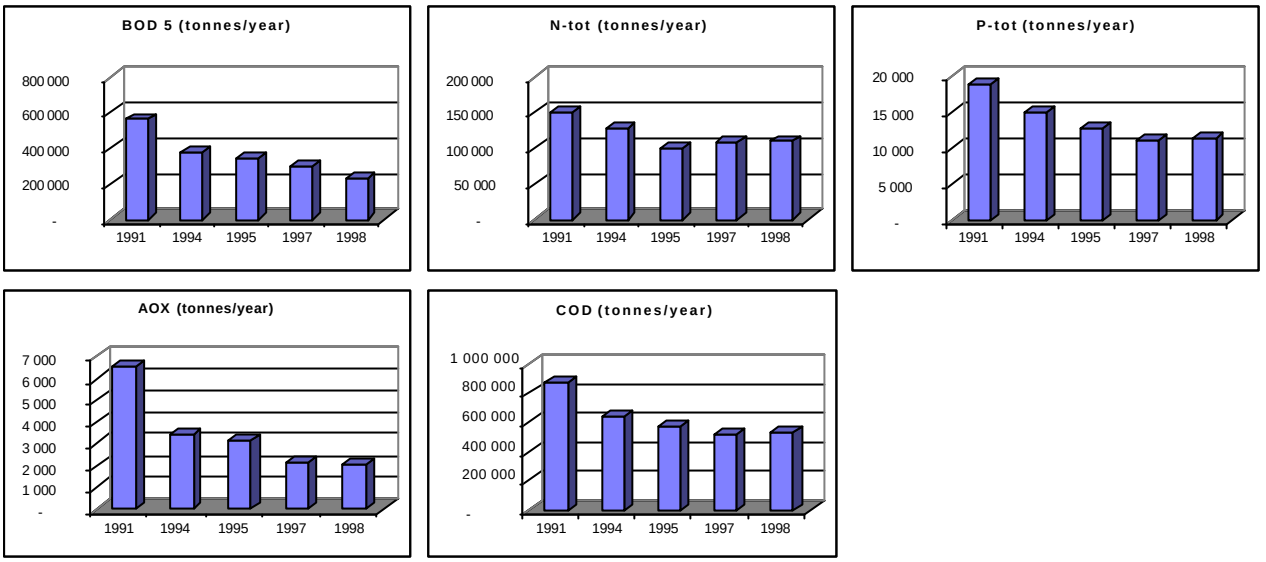


Figure 2 Waste water discharges from the reported Hot Spots

The good progress of AOX reflects that this has been a problem of one industrial sector (pulp and paper industry) which now has been mainly solved. Overall BOD reduction is also quite significant. BOD and COD reductions are not similar, due to incomplete reporting of COD emissions. Nutrient loading into the Baltic Sea are influenced mainly by municipal sources and diffuse loading from agriculture. Also airborne nitrogen pollution is significant but this aspect is not dealt with in this report.

Regarding air pollution of relevant hot spots, the situation has improved only regarding SO_2 emissions during the period 1991-1998. The results of SO_2 and NOx emissions are shown in tables 9f - 9g. From the year 1991 until the year 1998 the emissions have developed as follows (Figure 3):

- SO_x emissions have been reduced by 33 %
- NO_x emissions have remained at about the same level or slightly increased.

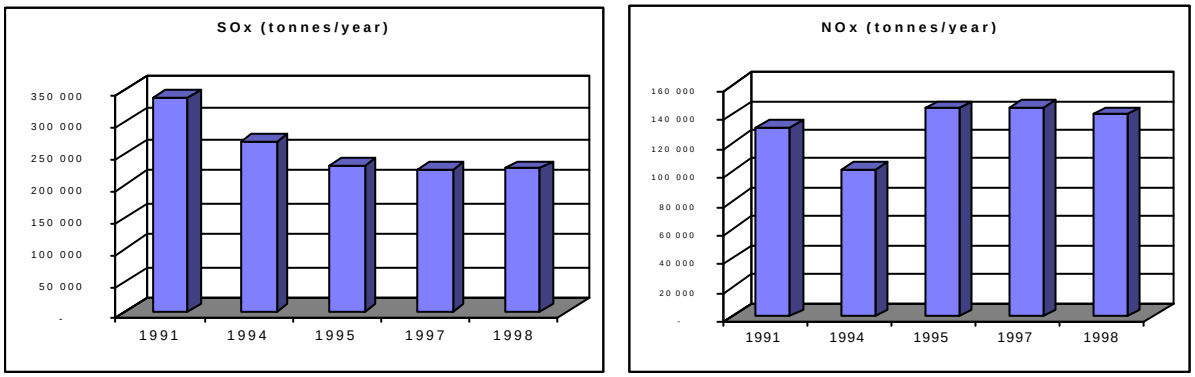


Figure 3 Air emissions from the reported Hot Spots

The air emissions of the coastal lagoon Hot Spots are so small that the analysis gives same results and Figure 3 is unchanged whether or not the coastal lagoons are included.

In the reduction of sulphur dioxide a major part of it is due to the decreased energy production of the Narva Power Plants in Estonia (Hot Spot No. 25).

Figures 4 and 5 show discharges and emissions by sector. The figures show that loading of nearly all the pollution categories in the industrial and municipal sectors has been clearly reduced. The only exception is NO_x in the municipal sector. The reason for NO_x emission increase is emission from Hot Spot No. 47 (Vitebsk). Emissions in Vitebsk in 1995, 1997 and 1998 are three times larger than in 1991 and 1994.

The increase in SO_2-emissions figures after the year 1997 (Sixth Inventory) in the municipal sector is not due to increased SO_2 emissions (in reality there has been a slight reduction in emissions). The reason is that in earlier inventories the emissions were missing for some Hot Spots, which reported the SO_2 emissions in the Seventh Activity Inventory. The most important of these Hot Spots were Nos 71 (Oil bunkering Station), 76 (Gdansk-Wschod) and 97 (Szczecin). By far the most significant emissions of these Hot Spots are in Gdansk-Wschold (10,127 tonnes), representing alone higher emissions than the increase of total emissions in the municipal sector compared to the Sixth Activity Inventory.

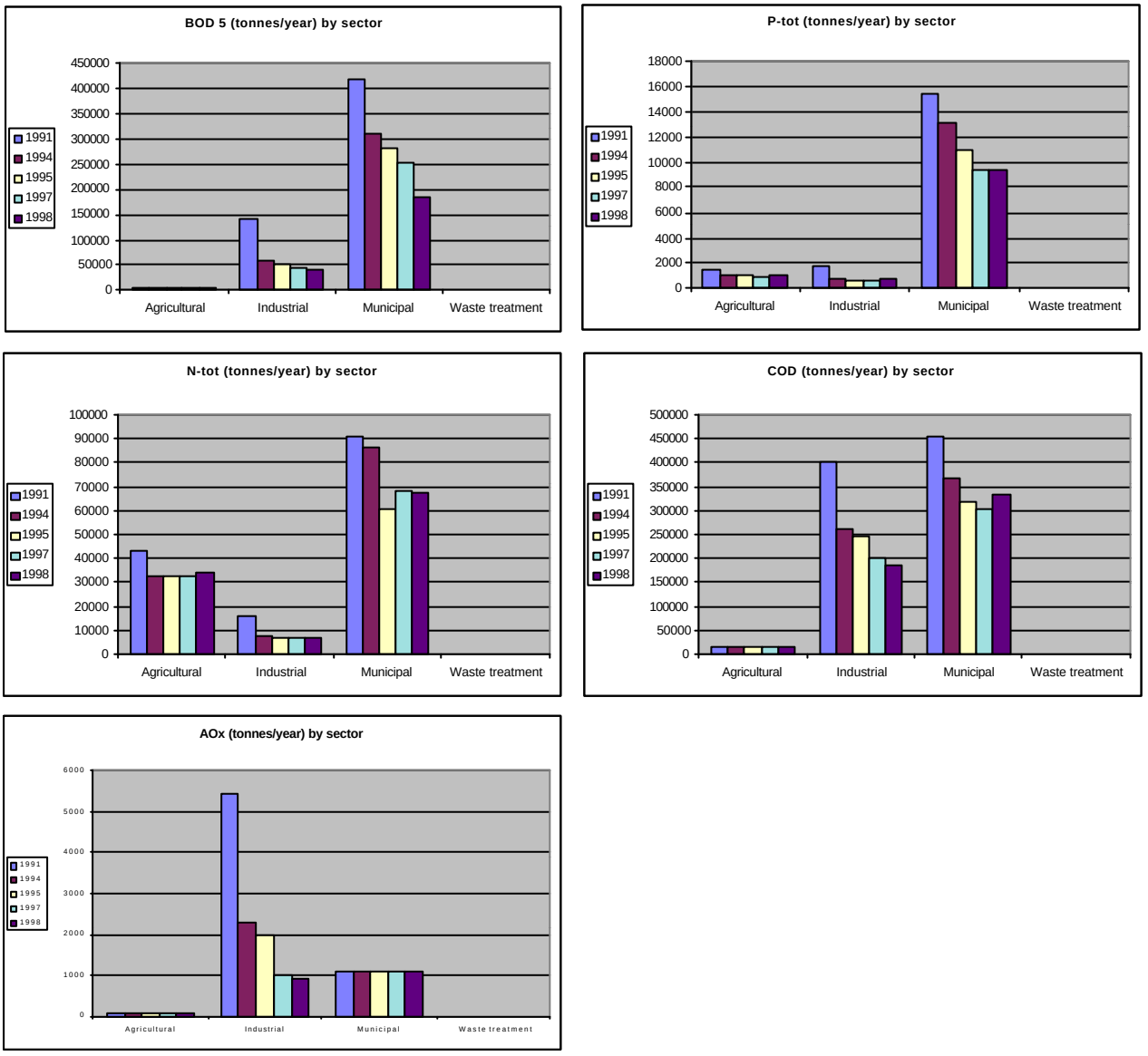


Figure 4 Waste water discharges from the reported Hot Spots by sector

Figures 4 and 5 show that there has been least progress with discharges and emissions to water in the agricultural sector.

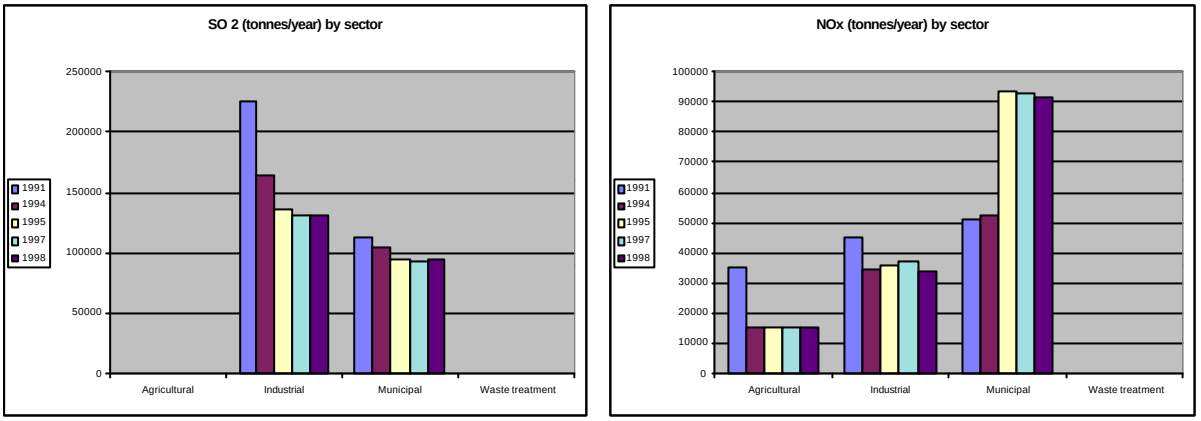


Figure 5 Air emissions from the reported Hot Spots by sector

Figures 6 and 7 present the emissions to the coastal lagoon hot spots. The reporting on coastal lagoon s indicates how much pollution loading the coastal lagoons receive through rivers and air from municipal, industrial, and agricultural sources. That information is important when considering possible deletion of coastal lagoon hot spots. Updated loading figures have not been received from several of the Hot Spots. Loading to coastal lagoon Hot Spots has been reported in the following way:

- Hot Spot No. 32, Matsalu Bay; year 1998 reporting does not give estimates for total loading, year 1997 reporting gives estimates for BOD_5, P and N total loading figures, which are not broken down based on the source. Most likely the figures include only load directly to Matsalu Bay from point sources.
- Hot Spot No. 37, Gulf of Riga Management; loading figures are from DEPA 94 (Danish Environmental Protection Agency and KCCV, Hot Spot Review - Vol 1, Executive Summary. Baltic Sea Environmental Programme, Nov. 1994) from the year 1991 and 1994, where the total loading is a sum of the most important point sources and rivers running to the Gulf of Riga.
- Hot Spot No. 66, Kursiu Lagoon; loading figures are form DEPA 94 from the year 1994 and include all the loading to the lagoon without break down based on the source.
- Hot Spot No. 73, Vistula Lagoon; load estimates are from the year 1998 and include load via rivers and load discharged directly to the lagoon.
- Hot Spot No. 133, Odra lagoon, load estimates are from the year 1998 and are lump sums without break down based on source.

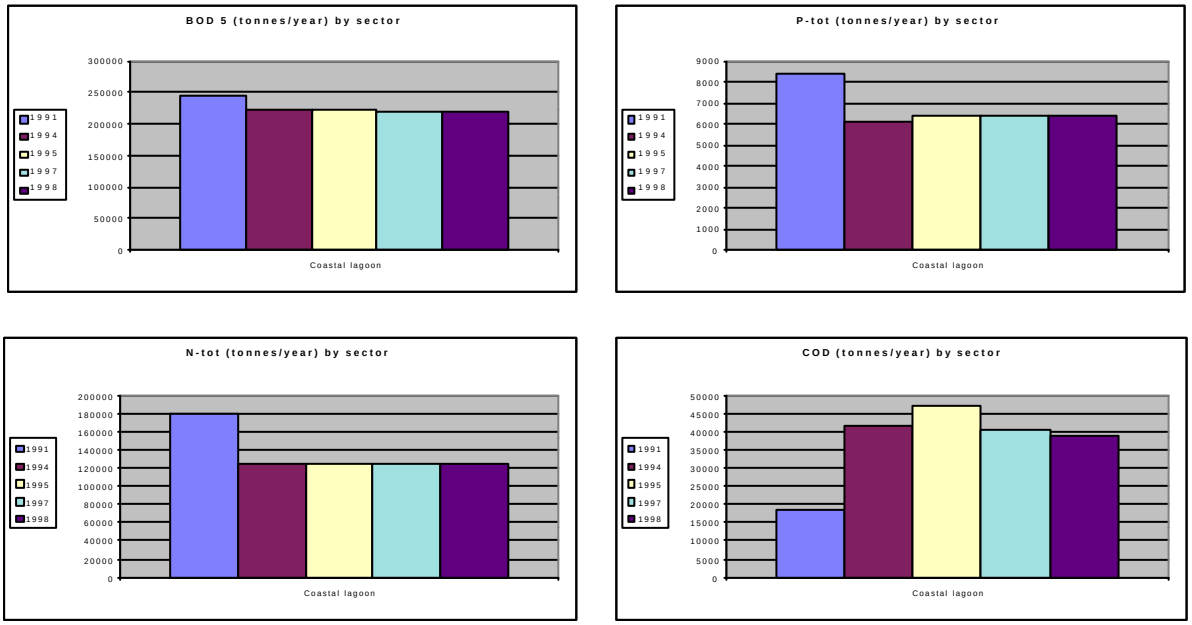


Figure 6 Waste water loading to coastal lagoon Hot Spots

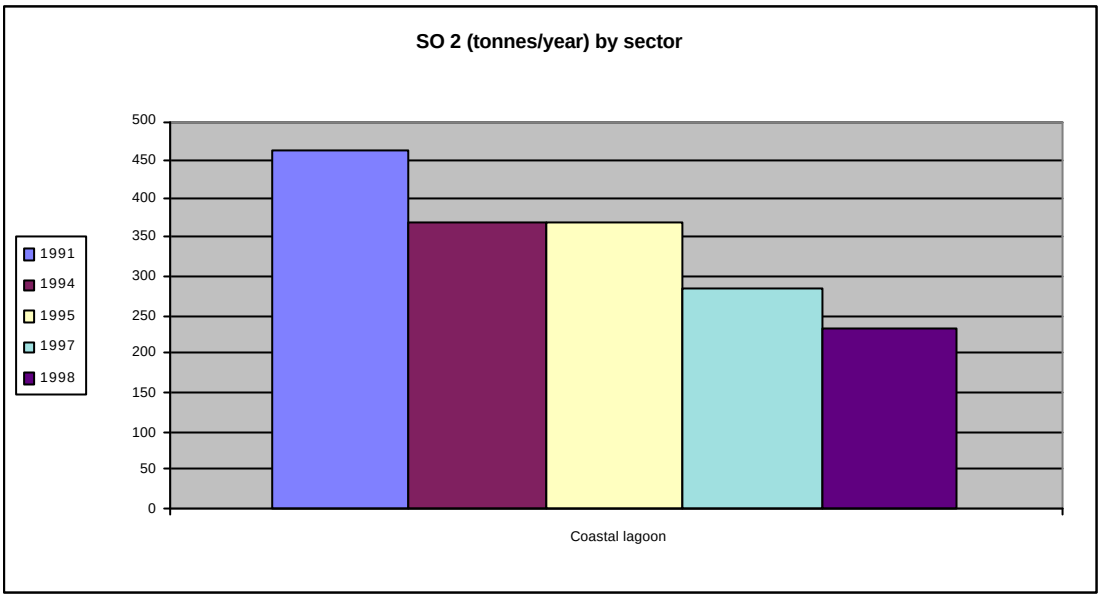


Figure 7 Air emissions to coastal lagoon Hot Spots

3.1.5 ACTIVITY AT THE HOT SPOTS

The status of the environmental projects is shown in the map in Figure 1 (page 8)

Tables 10 and 11 present the status of the environmental projects in Hot Spots by country and by site type (sector). They describe the ongoing projects or the reason why there is no environmental project underway. They also specify the time schedule of the actions described. The status of the projects is shown in graphical format in Figure 8.

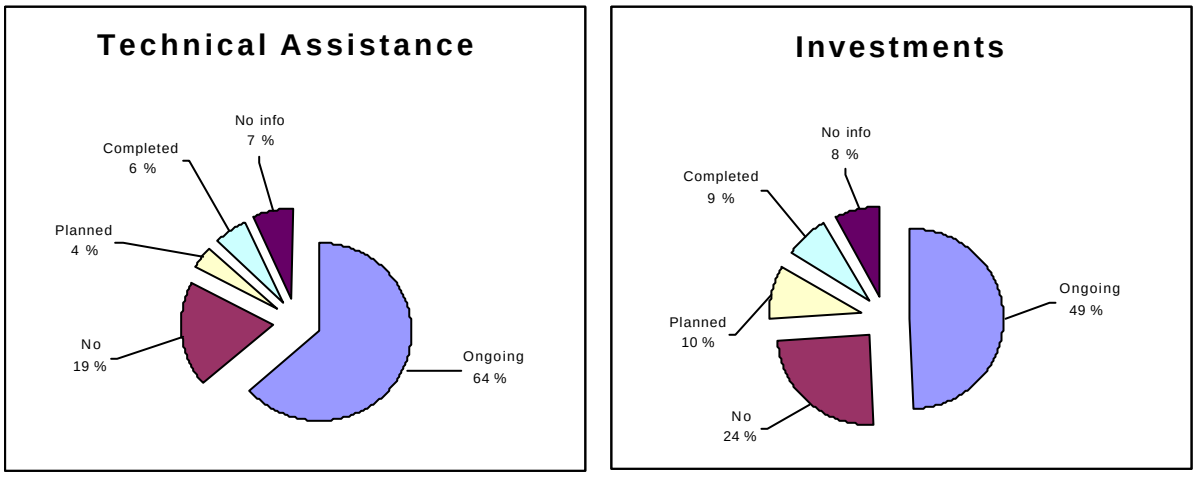


Figure 8 Status of technical assistance and investments 1999

Figures 9 and 10 present development of technical assistance and investment activities from the year 1993 to 1998. In technical assistance and investment activities progress can be seen. The development of projects is clearly from "No Activity" phase through "Ongoing" phase to "Completed/Deleted" phase. In the year 1998 the figure indicates development backwards. The development might be due to incomplete reporting. In many cases in the questionnaires the “activities” part was not filled in, even if there had been ongoing activities in the previous inventories. In interpreting the results it was not possible to judge if the activities had been completed or if they were the same as in the previous inventory. If there was no other indication on the activities it was assumed that the activities were completed.

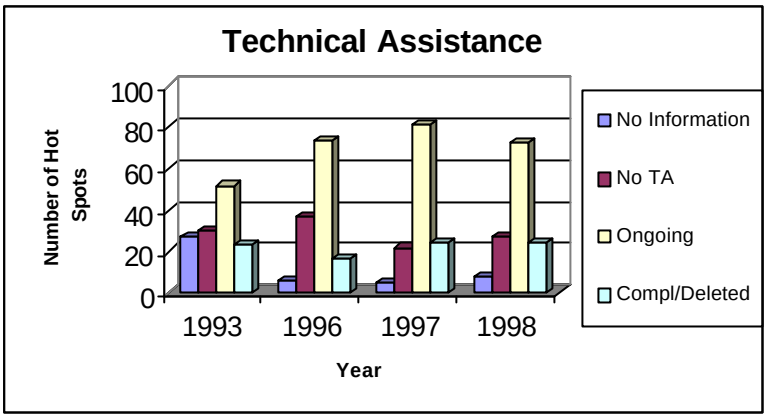


Figure 9 Development of Technical Assistance Activities between 1993 and 1998

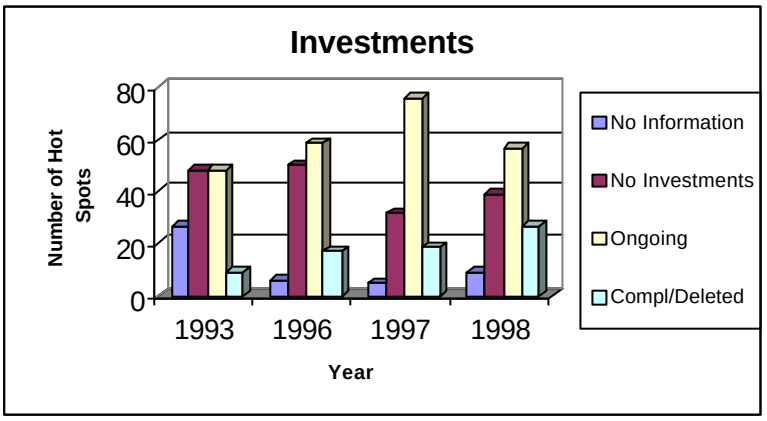


Figure 10 Development of Investment Activities between 1993 and 1998

3.1.6 FINANCIAL INFORMATION

Inventory figures on investments and activities at the Hot Spots are presented in Table 12. Figures for New Cost Estimate in 1999 are from the 1992 JCP unless new figures have been introduced. Given allocated or reserved resources do not necessarily indicate that resources are immediately available. The main sources of financing are national funds. Based on the results of the Sixth Activity Inventory about 75% of allocated or reserved resources are derived from national funds. The situation is about the same based on the results of the Seventh Activity Inventory. The cost information in 1999 was not reported well enough to enable the separation of local and foreign resources properly. The external financial sources are very important especially for Estonia, Latvia and Lithuania. Good examples of the external sources of financing are Denmark, Sweden, Finland, EU-PHARE, and several International Financial Institutions.

The breakdown of operational costs in the questionnaire includes costs for labor, electric power, chemicals, environmental fees, and other costs. However, only a few responses (about 10% of answers representing mainly hot spots with municipal and industrial activities) were received. Most of the responses are from Polish and Lithuanian Hot Spots, and some information was received also from Latvia and Estonia. Many answers indicated that the information was not available.

Figure 11 shows the estimated costs in the 1992 JCP and New Estimated Costs (with name "Estimated total costs" in the Figure 11) as well as allocated or reserved resources by sector. Figure 12 presents the New Estimated Costs broken down to allocated/reserved costs and still needed resource allocations by country.

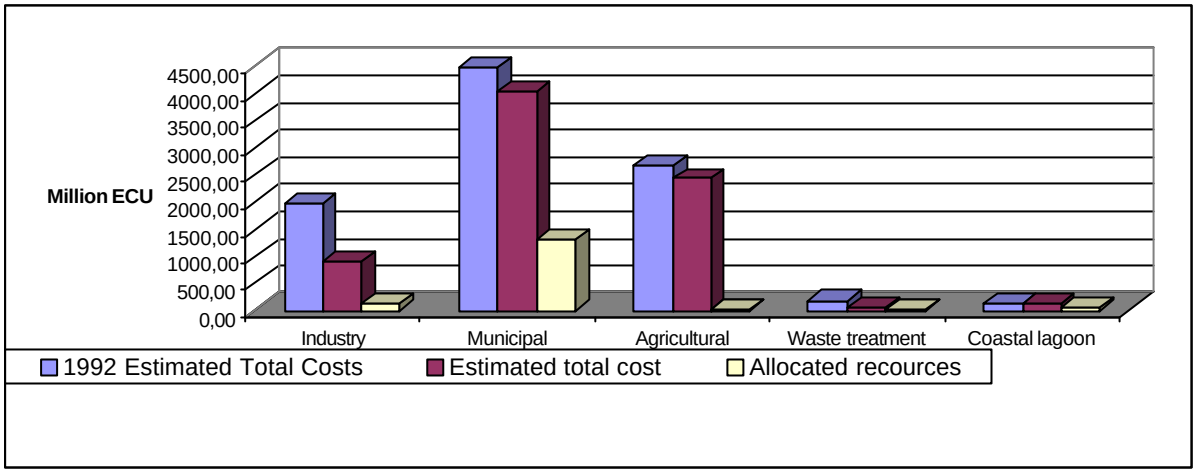


Figure 11 Estimated costs in 1999 and allocated/reserved resources by sector by the year 1999

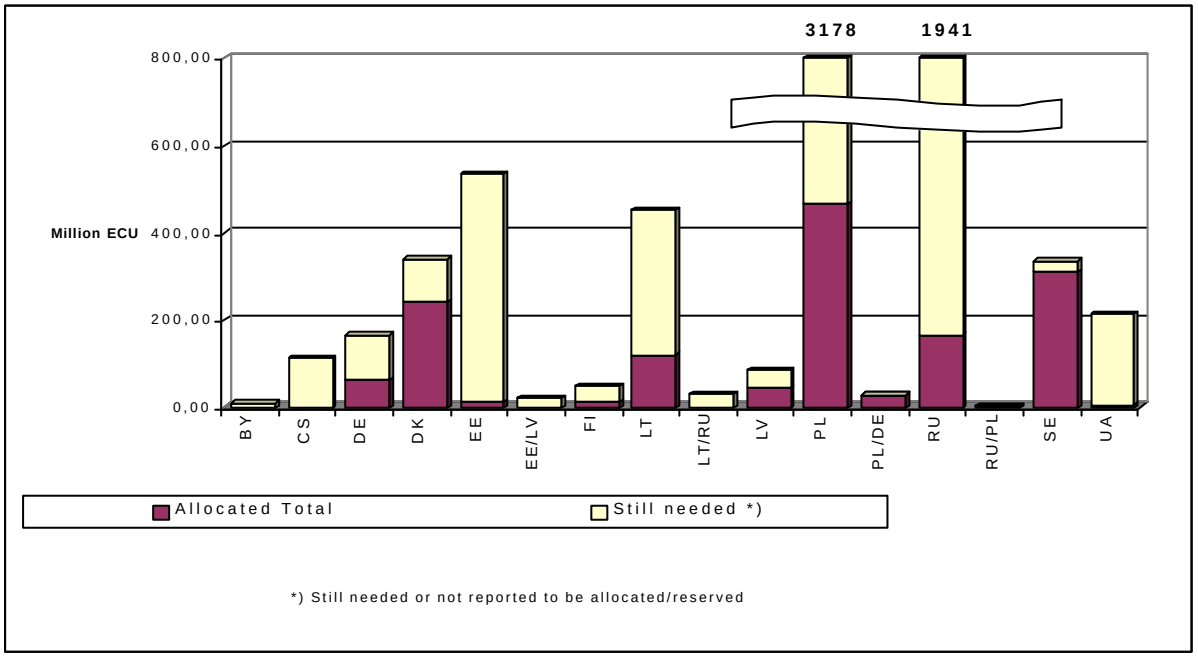


Figure 12 Estimated costs and allocated/reserved resources by country by the year 1999

In Figures 13 and 14 are presented developments of reported Investment Estimates and Allocated/Reserved funds from the year 1993 to 1998 in Priority Hot Spots and All Hot Spots. The allocation/reservation figures include also investments at the Deleted Hot Spots (MEUR 410). None of the Deleted Hot Spots is a Priority Hot Spot. The difference in 1999 allocation/reservation figures between All Hot Spots and Priority Hot Spots is the same as the total investments at the Deleted Hot Spots.

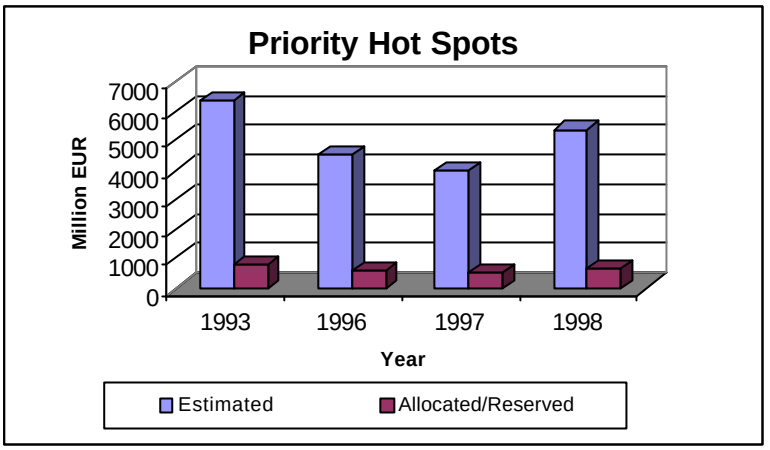


Figure 13 Development of Investment Estimates and Allocations/Reservations for Priority Hot Spots between 1993 and 1998 (including investments in the Deleted Hot Spots)

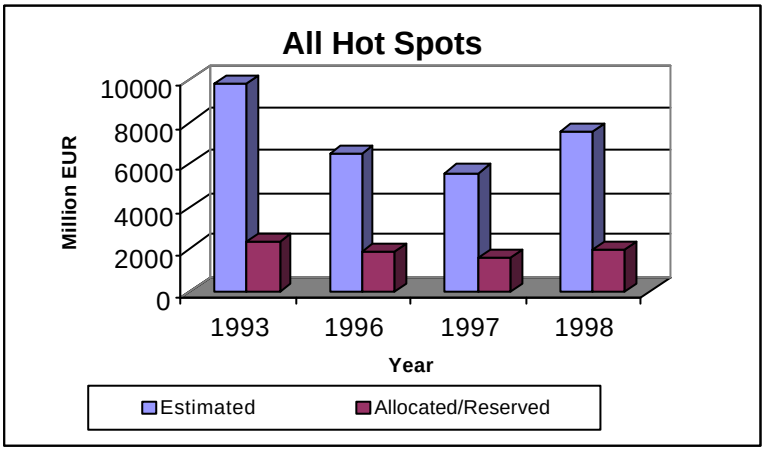


Figure 14 Development of Investment Estimates and Allocations/Reservations for All Hot Spots between 1993 and 1998 (including investments in the Deleted Hot Spots)

Based on Figures 9 and 10 clear progress has taken place between 1993 and 1999 in technical assistance and investment activities. The number of completed investment projects and deleted Hot Spots has increased from nine to 27 during the period. The reported fund allocation/reservation figures have not increased during the period (Figure 14). This indicates that investments, which have been made earlier, have not been reported in the later questionnaires and some investments have not been reported at all. Fund allocations and reservations have also been made after the year 1993.

The reported investment estimates have decreased between the years 1993 (Third Activity Inventory) and 1998 (Chapter 3.1.6). The 1992 investment estimates are naturally very close to the 1993 estimated investments.

The reporting on estimated costs has improved since 1997 which is reflected, *inter alia*, by increased investment estimates.

3.1.7 CONCLUSIONS

After the first seven years of running the Programme progress can be noticed. This is particularly true when one considers that all the hot spot projects are often large infrastructure projects. They do require, therefore, mostly multi-million EUR investments in order to be completed. Good examples in Estonia, Latvia, Lithuania and Poland are Hot Spots Nos 31 (Haapsalu), 41 (Siauliai), 42 (Riga), 46 (Daugavpils), 48 (Liepaja), 51 (Kaunas), 63 (Klaipeda) and 83 (Warsaw-Siekierki). In Poland substantial funds have been allocated from several local funds, *e.g.*, in Hot Spot No. 76 (Gdansk-Wschod).

Since HELCOM PITF consists of donor countries, international financial institutions and recipient countries, alike co-financing has been exercising successfully. In total a success has been achieved when about 64% of the remaining 115 Hot Spots are subject of technical assistance and about 49% of investments are underway and 17 Hot Spots have been removed from the list.

There are still some problems in reporting and interpreting financing issues in the Seventh Activity Inventory. Although the reporting improved during the last years, one should consider further development dedicated to the aim of the Activity Inventory to support the upgrading, reconstruction, etc., of the Hot Spots which needs more precise information on investments, too.

3.2 ELEMENT 3A: POINT SOURCE POLLUTION

3.2.1 COMBINED MUNICIPAL AND INDUSTRIAL WASTE WATER TREATMENT
(Lead Party Sweden)

The Swedish Environmental Protection Agency has elaborated this report, with the assistance of VAI VA-Projekt AB.

The report is solely based on the questionnaires submitted by the Contracting Parties. Consequently, the evaluation of the implementation of the recommendations is dependent on the number of submitted questionnaires and on the quality of reported data. No quality assurance of the reported data has been made.

The 1998 discharges of treated and untreated waste water and reduction/discharges of $BOD_{5/7}$, phosphorous and nitrogen are compiled and presented in enclosed the tables. The report is based on information from 47 municipal Hot Spots. However, the total number of municipal Hot Spots is 60, which means that data from 13 Hot Spots are completely missing either from 1997 or from 1998 or both. Furthermore, information is partly missing for some of the Hot Spots.

Due to these circumstances: totally missing information from 20 percent of the Hot Spots, partly missing information from some Hot Spots, and the fact that some of the reported data seems to be uncertain, makes a serious evaluation impossible. The information presented in this report should be viewed in this perspective.

Since the last Lead Party Report concerning 1997 municipal discharges (Swedish Environmental Protection Agency Report 4961), the Hot Spot No. 123 (Copenhagen, Denmark) has been proposed for deletion. All countries except Belarus, Ukraine and Czech Republic have submitted reports on municipal discharges.

In Report 4961, where data from 1991/92-1997 was presented, the discharged amounts of waste water were divided into "not treated", "partly treated" and "fully treated". In the enclosed tables, data in column "treated" includes both the amount of "partly treated" and "fully treated" waste water.

Below, the changes in discharges 1997-1998 are presented. The symbol "+" represents an increase in discharges, while "-" represents a decrease. When no data is presented in the "%" column, it means that the discharge has increased from 0, or that there are no data submitted, either from 1997 or from 1998.

Discharge figures given are in cases those discharged to a local recipient, and should therefore not be interpreted as the load entering the Baltic Sea sub-basins, as the possible effect of retention is not calculated.

Changes in discharges 1997 – 1998

1. Gulf of Finland

Table 1.1 Treated and untreated waste water discharged into the Gulf of Finland

Hot Spot No.	Country	Site name	Changes in discharges of			
			treated water		untreated water	
			Mm^3/year	%	Mm^3/year	%
18+19+20	Russia	St. Petersburg*	+41.4	+5	+23.9	+10
26	Estonia	Kothla Jarve	-4.7	-33	+0.1	+13
28	"	Tallinn	-19.8	-23	+0.02	79
*) Sewers, 3 urban and 25 suburban WWTPs.						

Table 1.2 BOD, phosphorus (P) and nitrogen (N) discharged into the Gulf of Finland

Hot Spot No.	Country	Site name	Changes in discharges of					
			$BOD_{5/7}$ tonnes/year	%	P tonnes/year	%	N tonnes/year	%
18+19+20	Russia	St. Petersburg	+18,388.3	+55	-43.5	-2	+425	+3
26	Estonia	Kothla Jarve	-64	-8	-6.5	-41	-82	-20
28	"	Tallinn	+8110	+2400	130	+185	-321	-34

*) See footnotes in Table 1.1

Comments

On the basis of submitted data, one can conclude that the total discharges of treated waste water into the Gulf of Finland from three St. Petersburg and two Estonian Hot Spots have increased by approximately 17 million cubic meters (Mm^3). The discharges of untreated waste water have increased by approximately 24 Mm^3.

The amounts of BOD and phosphorus and nitrogen, that have been discharged into the Gulf of Finland from the Hot Spots presented in Table 1.2, have increased between 1997 and 1998: BOD by 26,400 tonnes; phosphorus by 80 tonnes and nitrogen by 22 tonnes. The data on BOD discharges from St. Petersburg is not comparable to the corresponding data from Estonia, as Russia has submitted data on "total BOD" and not BOD_5 or BOD_7 as stipulated in the HELCOM Recommendations.

The changes presented are solely based on data that has been submitted both 1997 and 1998. Due to lack of data from a number of Hot Spots, either from 1997 or 1998 or both, it has not been possible to present the changes concerning all Hot Spots. Furthermore, the lack of data has not made it possible to determine whether the total discharges into the Gulf of Finland (or into any other specific catchment areas) have decreased or increased.

2. Gulf of Riga

Table 2.1 Treated and untreated waste water discharged into the Gulf of Riga

Hot Spot No.	*Country*	*Site name*	*Changes in discharges of*			
			treated water		*untreated water*	
			Mm^3/year	*%*	*Mm^3/year*	*%*
31	Estonia	Haapsalu	-0.29	-38	+0.08	+1000
33	"	Pärnu	+0.47	+10	-0.26	
34	"	"	+0.45	+42	-0.52	-81
41	Lithuania	Siauliai	+0.49	+5	0	0
42	Latvia	Riga	-67.8	-78	+50	+310
46	"	Daugavapils	-6.3	-38	-1	-100

Table 2.2 BOD, phosphorus (P) and nitrogen (N) discharged into the Gulf of Riga

Hot Spot No.	*Country*	*Site name*	*Changes in discharges of*					
			$BOD_{5/7}$ tonnes/year	*%*	*P tonnes/year*	*%*	*N tonnes/year*	*%*
31	Estonia	Haapsalu	-43.6	-93	-2.2	-78	-8.6	-48
33	"	Pärnu	-7.0	-15	+1.0	+18	-2.4	-10
34	"	"	-15.2	-43	+0.5	+16	-2.1	-12
41	Lithuania	Siauliai	+5.0	+5	+1.8	+12	-13.0	-4
42	Latvia	Riga	-5 730	-92	-95.8	-34	-485.6	-32
46	"	Daugavapils	-557.2	-29	-32.9	-50	-149.8	-42

Comments

The discharges of treated waste water into the Gulf of Riga from those Hot Spots that have been reported on both 1997 and 1998 have decreased by 73 Mm^3, while the discharges of untreated waste water have increased by 48 Mm^3.

The amounts of BOD, phosphorus and nitrogen, that have been discharged from the Hot Spots in Table 2.2 have decreased between 1997 and 1998; BOD by 6,350 tonnes; phosphorus by 130 tonnes and nitrogen by 660 tonnes.

3. Eastern Gotland Basin including Gdansk Basin

Table 3.1 Treated and untreated waste water discharged into the Eastern Gotland Basin

Hot Spot No.	Country	Site Name	Changes in discharges of			
			treated water		untreated water	
			Mm^3/year	%	Mm^3/year	%
48	Latvia	Liepaja	-2.1	-16	-1.8	-47
51	Lithuania	Kaunas	0	0	-4.2	-12
53	"	Kedainiai	+0.1	+3	0	0
55	"	Panevezys	+0.8	+7	0	0
57	"	Marijampole	-0.7	-10	0	0
58	"	Alytus	-1.3	-17	0	0
59	"	Vilnius	+1.4	+3	0	0
63	Lithuania	Klaipeda	-0.67	-3	-0.07	-13
65	"	Palanga	-0.80	-19	0	0
67	Russia	Kaliningrad	-3.68	-4	-1.64	-21
73*	Poland	Frombork	-0.02	-13	0	
"	"	Krynica Morska	+0.02	+5	0	
"	"	Tolkmicko	-0.02	-6	0	
"	"	Piaski	0	+14	0	
74	"	Koszalin	+0.30	+2	0	
75	"	Gdynia-Debogórze	+1.27	+5	0	
76.1	"	Gdansk–Wschód	+1.69	+5	-0.20	-100
78	Poland	Bydgoszcz-Fordon	-1.0	-13	-1.8	-10
79	"	Bydgoszcz-Kapusciska	-7.3	-100	-2.4	-11
80**	Poland	Torun	+13.43		-19.99	-100
82	"	Warsaw – Czajka	-1.9	-2	0	0
83.1	"	Warsaw – Siekierki	0	0	0	0
84	"	Warsaw – Pancerz	0	0	0	0
85	"	Lublin – Hajdow	-0.5	-2	0	0
86	"	Crakow – Plaszow	-12.2	-21	+10.8	+48
87.1	"	Crakow – Kujawy	0	0	+15	0

*) Discharges from Braniewo, Malbork, Nowy Staw to Malbork WWTP, Elblag, Vistula Spit to Stegna WWTP, Stegna WWTP, Orneta, Sztum, Susz, Dzierzgon and Pieniezno are given account for as river loads entering the Vistula Lagoon.

**) No info on Torun concerning 1998. The data above represent information achieved after start up (7 months 1999).

Table 3.2 BOD, phosphorus (P) and nitrogen (N) discharged into the Eastern Gotland Basin

Hot Spot No.	Country	Site name	Changes in discharges of					
			$BOD_{5/7}$		P		N	
			tonnes/ year	%	tonnes/ year	%	tonnes/ year	%
48	Latvia	Liepaja	+56.5	+51	-30.7	-82	-76.5	-32
51	Lithuania	Kaunas	+1 911.0	+36	+140.0	+90	+521.0	+48
53	"	Kedainiai	+11.0	+28	-5.0	-38	-7.7	-11
55	"	Panevezys	-51.0	-13	-2.7	-5	+11.2	+3
57	"	Marijampole	-40.0	-20	-2.0	-13	+23.0	+27
58	"	Alytus	+130.0	+85	-18	-47	-10.0	-6
59	"	Vilnius	-99.0	-10	+20	+14	-1 682.7	-78
63	Lithuania	Klaipeda	+31.0	+1	0	<1	+101.3	+15
65	"	Palanga	-74.0	-25	-1.0	-7	-6.0	-6
67	Russia	Kaliningrad	-2622	-19	+79.0	+60	-305.9	-18
73*	Poland	Frombork	-18.1	-50	-1.1	-42	-6.7	-21
"	"	Krynica Morska	+4.5	+140	+1.0	+22	+15.3	+201
"	"	Tolkmicko	-9.8	-93	-0.4	-8	-2.4	-20
"	"	Piaski**	+1.5	+1900	-0.1	-24	+1.1	+150
74	"	Koszalin	-14.1	-13	-4.2	-28	+150.0	*** +42
75	"	Gdynia	-106.0	-24	-16.3	-25	+386.1	+590
76.1	"	Gdansk	+124.0	+3	+22.0	+27	-251.0	-14
78	Poland	Bydgoszcz	-422.2	-12	*No data from 1997*			
79	"	Bydgoszcz	*No data from 1997*					
80**	Poland	Torun	-5 128.4	-97	*No data from 1997*			
82	"	Warsaw – Czajka	-1 627.5	-53	-158.5	-70	-141.6	-7
83.1	"	Warsaw – Poludnie	+2886	+39	-99	-23	-665	-29
84	"	Warsaw – Pancerz	0	0	0	0	0	0
85	"	Lublin – Hajdow	-149.0	-19	+9.6	+4	+192.4	+20
86	"	Crakow – Plaszow	+1 984.0	+16	+26.0	+11	-12.0	-1
87.1	"	Crakow – Kujawy	+1 060.0	+37	+2.0	+1	+32.0	3

*) see information in Table 3.1 and Chapter 3.1.4
**) see footnotes in Table 3.1
***) corrected nitrogen data for 1997 was reported in the questionnaire on the status of Hot Spot no. 74 in 1998

Comments

The discharges of both treated and untreated waste water into the Eastern Gotland Basin from those Hot Spots that have been reported on both 1997 and 1998 have increased by 10 and 18 Mm^3 respectively. The discharged amounts of BOD and nitrogen have decreased by 50 and 1,300 tonnes, respectively, while the discharged amounts of phosphorus have increases by 59 tonnes.

List of Appendixes (enclosed to this Report)

1998 DISCHARGES OF TREATED AND UNTREATED WASTE WATER AND REDUCTION/DISCHARGES OF $BOD_{5/7}$, PHOSPHOROUS AND NITROGEN (DATA REPORTED IN 1999)

Appendix 1. Gulf of Finland (p. 127)
Appendix 2. Gulf of Riga (p. 128)
Appendix 3. Eastern Gotland Basin including Gdansk Basin (pp. 129-131)
Appendix 4. Arkona Basin (p. 132)
Appendix 5. Belt Sea, The Sound and Kattegat (p.133)
(no new data concerning discharges into the Sound and Kattegat)

3.2.2 INDUSTRY

(Lead Party Finland)

Out of the 132 Hot Spots originally listed by HELCOM 50 are industrial. In addition there are many industries connected to municipal sewers listed as municipal Hot Spots. Out of the 50 industries 37 are located in the countries in transition and nine of those are classified as Priority Hot Spots. In the countries in transition at least two pulp and paper mills, one metal-plating plant and one fish-processing plant are closed and the production has decreased at other plants as well.

To date, five Swedish, six Finnish, two Estonian and one Russian industrial Hot Spots have been removed from the list.

Two sub-Hot Spots in Poland have been deleted because polluting industrial activities have been completely discontinued.

Activities are identified at about 20 sites out of the 35 purely industrial Hot Spots in the countries in transition. In thirteen of them some kind of investment activities are ongoing. Furthermore several Hot Spots listed as municipal ones including industrial plants have obtained some kind of attention. In addition to these activities some pre-feasibility studies have been carried out at Hot Spots ,but due to the lack of funds they have not led to any concrete investments. We still lack any information from three industrial Hot Spots (Nos 104, 108 and 110). These are Hot Spot areas with several different industrial activities and are therefore difficult to report on. The production has stopped totally at least at two existing Hot Spots. In Sweden and Finland activities have been identified at all 14 industrial Hot Spots and eleven of them have already been deleted from the Hot Spot List. Belarus, Denmark, Germany and Ukraine have no industrial Hot Spots listed.

It appears that more financial aid is given to the industrial sector outside the Hot Spot List than to the Hot Spots. This shows that it is easier to find local motivation and resources to invest in small enterprises and relatively modern facilities than in large sites which require modernization of the whole manufacturing process as well as environmental investment.

In addition to the financial aid given to local enterprises, support has also been given to western enterprises establishing new production facilities in the countries in transition in the environmental field, like the production of water chemicals in Tallinn and the bioenergy plant in Türi. A few existing production plants are taken over by western enterprises. We may here mention the Kunda Cement Mill (Estonia) taken over by the Nordic Cement Corporation, the Kiviter benzoic acid unit in Kohtala-Järve (Estonia) taken over by an American company and the Svetogorsk Pulp and Paper Mill (Leningrad) taken over by a Swedish company. The process of privatization is, however, still slow and the uncertainty of ownership adds to the problems. The land reform is an important part of the process. There is low willingness among investors to take over landfills, old waster-water treatment plants and other polluted sites.

LESSONS LEARNED

Summarizing the experience one can say that one of the key factors to progress in project preparation and implementation is political and financial commitment at the national and local level. The international partners also need long term commitment in order to be ready to participate in projects. Due to the fact that public support has been critical to sustaining political commitment, public awareness should be

improved and the corresponding Programme element should be given special attention within the frame of Hot Spots' management.

A successful project should have a clear definition with well-defined goals and objectives. Investment studies should only be prepared once a clear commitment exists from the government and potential sources of domestic and foreign finance are identified. The regional co-operation between riparian countries should be strengthened.

Detailed evaluation and review of a range of alternatives have provided better project designs. Project management, enterprise management ,and operation training should be included. Environmental audits should be included in the privatization process in order to clarify liability questions related to polluted sites and the refurbishment production plant accordingly.

An interactive process between technical and financial analysis is required due to issue of affordability. It is also important to adopt a realistic implementation period and anticipate potential changes in customs duties and taxes.

CRITERIA FOR DELETION AND INCLUSION OF HOT SPOTS IN THE LIST

In May 1999 PITF 14/99 adopted the Procedure and Guidelines for Inclusion and Deletion of Hot Spots, which establish a replicable mechanism for Hot Spots' deletions and additions and provide a mechanism for setting target goals for the planning and implementation of investment activities at the Hot Spots (Annex 3).

Additionally an enquiry to the member countries of PITF will be conducted in order to analyze the situation on Hot Spots based on the agreed criteria for inclusion and deletion and national assessments.

3.3 Element 3B: Non-point source pollution

3.3.1 AGRICULTURE
(Lead Party Poland until May 1999 and Germany)

Due to significant impacts from runoff of manure, fertilizers and pesticides to surface waters and ground waters as well as from emissions of nutrients and pesticides into the atmosphere and finally to the marine environment, control of runoff and emissions from agriculture and livestock operations is a critical element of the immediate and long-term strategy to restore the ecological balance of the Baltic Sea.

The HELCOM PITF/TC Project on Agriculture (PTA) almost finalized its main tasks, i.e., to elaborate an Annex on Agriculture to the Convention, Codes of Good Agricultural Practice (GAP) as well as a Review of Monitoring Projects related to agriculture in the catchment area of the Baltic Sea (RMP). The Annex on Agriculture was adopted at HELCOM19 in March 1998. The GAP Codes were almost finalized by the end of 1999.

PITF 13/98 confirmed HELCOM PITF's commitment towards reduction of pollution caused by agriculture activities and established an Analysis Group which should report and propose to PITF 14/99 on how to proceed, in particular on division of the work related to agriculture between HELCOM and Baltic 21 and on possible establishment of a HELCOM body on agriculture.

Denmark took the lead of that group (AAG). The AAG meeting on 12 March 1999 in Copenhagen, Denmark, agreed on division of work between PITF and Baltic 21 related to agriculture which was endorsed by PITF 15/99 and by SOG 11 (in St. Petersburg, Russia, on 7-8 October 1999).

The Lead Party Germany convened a meeting on agriculture in Berlin, Germany, on 4-5 October 1999 and agreed on a proposal to establish an *ad hoc* Working Group on Agriculture to be forwarded to PITF 15/99 for consideration and possible adoption.

PITF 15/99 adopted the proposal by Germany including Terms of Reference, objectives and work plan with slight amendments. The *ad hoc* Working Group is scheduled for three years and one of its main tasks should be to tackle nutrient load from agricultural sources. The Land-based Pollution Group (HELCOM LAND) was invited to share the responsibilities of the Working Group on Agriculture (WGA).

3.3.2 TRANSPORT
(Lead Party Germany)

The JCP will support activities to reduce air pollution from mobile sources, including emission-control technologies (three-way catalysts) for vehicles, inspection programmes for improved engine tuning and maintenance of control systems. By transportation large quantities of CO, CO_2, NO, VOC and metals are emitted. Of special concern for the Baltic Sea are nitrogen and lead. About 300,000 tonnes of nitrogen is deposited annually into the Baltic Sea via the atmosphere (30% of the total nitrogen input).

At the Special Meeting of HELCOM PITF in February 1998 a policy and technology oriented Project on Transportation was established. This built upon HELCOM Recommendation 17/1 "Reduction of Emissions from Transport Sector Affecting the Baltic Sea" which, *inter alia*, calls for integration of environmental considerations into transportation planning and policy.

The Project developed guidelines and recommendations for investments in infrastructure to support a sustainable, less polluting transport system in the HELCOM PITF countries.

PITF 14/99 requested the Lead Party Germany to present to PITF 15/99 proposals on how to proceed, including the option of a HELCOM Recommendation, after consultation with the IFIs, Baltic 21, and taking into account other comments. Following this request Germany started a follow-up project in order to promote the implementation of draft guidelines for environmentally sustainable transportation investment decision-making in the Baltic Sea region, at both country and multilateral financial institutions' level. The draft guidelines propose:

- changes in project appraisal (general)
- changes in economic and financial appraisal
- changes in current environmental assessment practice
- financing more sustainable transport projects
- public participation in policy making and planning should be framed in a manner that they could potentially be applied as HELCOM Recommendation.

The project shall be supported by a workshop to be held in spring 2000.

PITF 15/99 approved the proposal to elaborate a draft HELCOM Recommendation and welcomed possible political support by Baltic 21. It also endorsed the idea to publish the project report "Transport Sector Investment Decision-Making in the Baltic Sea Region" in the Baltic Sea Environment Proceedings (BSEP) and appreciated the offer by Germany to take care of the financing of the edition.

4. *Management Plans for Coastal Lagoons and Wetlands*
(Lead Party WWF)

Wetlands and coastal lagoons are environmentally sensitive and economically valuable areas. They serve as important buffers in the transport of contaminants to the Baltic Sea by acting as natural traps and providing variable levels of treatment of biodegradable wastes, especially with respect to nutrients. They also provide critical habitats for a variety of fauna and flora including migratory birds.

Within the framework of the JCP the development of a series of demonstration activities concerning the use of natural and constructed wetlands for the targets mentioned above should be supported. Upon successful evaluation, these activities will be extended to cover additional areas.

Five Integrated Coastal Zone Management Plans (ICZMPs) in areas on the Baltic Sea coast are almost finalized, covering environmentally sensitive and economically valuable areas in Estonia, Germany, Latvia, Lithuania, Poland and Russia. An interim phase has been used for careful preparation of implementation of the ICZMPs. The acceptance of local and national authorities has been achieved to a great extent.

The Working Group HELCOM PITF MLW held the eleventh meeting in Brussels, Belgium, on 27-28 September 1999. Based on the decisions taken by HELCOM EXTRA 99 the meeting considered thoroughly the consequences for MLW and tried to identify the place and role of ICZM issues within the new structure of HELCOM and PITF. It was recognized that the ICZM and wetland related issues should be handled within the Nature Conservation and Coastal Zone Management Group. WWF offered to lead a project on activities on coastal lagoons and wetlands.

HELCOM PITF 15/99 approved the proposal by the MLW Working Group to dissolve the Working Group and to continue activities related to coastal lagoons and wetlands in the frame of the newly established Nature Conservation and Coastal Zone Management Group.

Regarding the issue of spatial planning the meeting stressed the need of further co-operation with VASAB 2010 and encouraged the MLW representatives and VASAB to co-corporate on country level with the spatial planning authorities.

5. *Applied research*

(Lead Parties Sweden and Latvia)

This element aims to build the knowledge base needed to develop solutions, and widen and deepen the understanding of critical problems. Priority applied research tasks include, *inter alia*, environmental trends, special issues of system ecology, evaluation of critical loads, environmental health problems and are, of course, dealing with issues in key sectors, as agriculture and transportation, for example.

Additional issues recommended for applied research are

- least cost approaches
- biological effect monitoring
- strengthening the monitoring system
- dissemination of information.

The Environment Committee (dissolved in the course of HELCOM's reorganization after the meeting in October 1999) reported to HELCOM PITF 15/99 on applied research within the PITF framework to strengthen and optimize environmental protection measures in the marine environment. The present ideas on strengthening monitoring and assessment as well as the restoration, protection and conservation of the ecosystem of the Baltic Sea Area give an overview on already ongoing or planned projects in the Baltic Sea region and describe the links to them.

PITF invited the newly established Monitoring and Assessment Group to take the responsibility regarding the JCP element "Applied Research" and to report to PITF.

6. *Public Awareness and Environmental Education*

(Lead Party Finland)

This component of the Programme aims to develop a broad and sustainable base of support for the implementation of the JCP. Public awareness is needed to obtain support for action by localities, municipalities and national governments. Both public awareness and environmental education are needed to develop a widespread understanding and popular support for the long-term activities within the Baltic Sea and its catchment area.

The Working Group on PA&EE tried to be integrated into project work (cf. PITF/TC Project on Agriculture, PITF Project on Transportation and Integrated Coastal Zone Management Plans). Several PA&EE projects have been carried out, *e.g.*, the project “Raising environmental awareness in the Baltic Sea Area”.

The Eleventh Meeting of the Working Group on Public Awareness and Environmental Education mainly focused on the consequences arising from the outcome of HELCOM EXTRA 99. It is anticipated that an officer on information and public awareness issues will work permanently in the HELCOM Secretariat. In order to preserve the experience gained by the Working Group it was offered to assist the HELCOM and the Secretariat in the work related to public awareness and environmental education, *e.g.*, via an adviser network.

HELCOM PITF 15/99 decided to dissolve the PA&EE Working Group. Baltic 21 expressed the view that the activities of an advisory network might be included in Joint Action 7 under Baltic 21 if its scope of work was broadened to include sustainable development.

In order to avoid losing the goals for PA&EE, as formulated in the JCP, when transforming the JCP's PA&EE activities into the new HELCOM structure the Secretariat should consider the possibility of including the JCP goals of element 6 (PA&EE) into the coming activity of the new HELCOM component on information and communication.

V HELCOM Review and PITF

At HELCOM 19/98 the Commission decided to undertake a review of the work of HELCOM, its subsidiary bodies and PITF with the objective of identifying constraints to the effective implementation of the Helsinki Convention, and to recommend appropriate changes to the institutional framework and/or operations of HELCOM, its subsidiary bodies and PITF in the light of new political, economic and environmental circumstances in the Baltic Sea region.

The following key requirements should be attained:

- HELCOM should be structured so as to facilitate operating in a more proactive manner;
- repositioning for a new political/economic context should fully take into account the HELCOM potential strengths;
- roles and responsibilities should be clarified for policy and priority setting and progress-chasing issues;
- prompt resolution of issues and flexibility to adjust to changing circumstances should be ensured;
- financing needs should match to available resources;
- internal and external co-ordination and co-operation should be improved;
- roles and responsibilities of HELCOM, its subsidiary bodies, Contracting Parties and executive staff should be well-defined.

The Report prepared by the Review Steering Group (RSG) containing the main findings from the undertaken analysis and relevant recommendations for improvement was presented to HELCOM 20/99.

The high-level session at HELCOM 20/99 adopted the following Recommendations:

- The Heads of Delegation, taking into account the objectives of the Helsinki Convention, the JCP and other developments in the Baltic Sea Area, as well as the future tasks outlined in the Report, should propose a set of specific priorities which will guide the operation of HELCOM in the short and medium term, and a strategic vision for its future development.

- The Commission should concentrate on major policy decisions and priorities. It should meet at ministerial level at least every three years. It should mandate the Heads of Delegation, meeting four times per year, to manage and supervise the implementation of policy.

- The Heads of Delegation should play a stronger role in making policy and strategy proposals to the Commission. They should also supervise and support the Executive Secretary in programme development and management.

- The Executive Secretary should be given the responsibility, authority and resources to carry out the policies, strategies and programmes approved by the Heads of Delegation. He/she also has the duty to advise the Heads of Delegation on policy formation.

- The existing committee structure should be replaced by a more flexible set of arrangements for channelling the expertise existing at national level to the use of HELCOM.

- The PITF should retain its present structure and concentrate on Programme element 3 of the JCP. It should be serviced by staff of the Secretariat.

- All other consultative committees, working groups and task forces which may be constituted should be serviced by staff of the Secretariat.

- The Heads of Delegation, working through the Executive Secretary, should inculcate the new, more proactive and efficient operational style and culture outlined in the Report, with a consequent reduction in the level of bureaucracy. The Secretariat will need to be staffed by professionals openly recruited on the basis of relevant experience and expertise, and the ability to manage processes and motivate people in the relevant networks.

Based on the RSG Report and these Recommendations the Enlarged RSG (ERSG) was requested to elaborate draft proposals for the documents and outstanding issues identified.

The draft proposals were further developed (Joint Meeting of the Heads of Delegations to HELCOM and the Chairmen and the Secretariat of the Helsinki Commission together with the Enlarged HELCOM Review Steering Group, Helsinki, Finland, on 29 July 1999) and forwarded to HELCOM EXTRA 99.

The Commission decided on priority areas, the outline of a Working Programme for HELCOM for the years 2000-2002, and on establishing the following subsidiary bodies

- Strategy Group
- Monitoring and Assessment Group
- Land-based Pollution Group
- Sea-based Pollution Group
- Nature Conservation and Coastal Zone Management Group

to replace the present Committees, on major responsibilities of the new subsidiary bodies and the Secretariat as well as on revised rules and regulations.

Furthermore, the Commission dealt with the relation between PITF and HELCOM, confirmed that PITF will retain its autonomy within the framework of HELCOM and offered to include in its daily work and overall responsibility the following elements of the JCP with the understanding that the co-operating Observer Organizations will continue their supporting efforts

- element 1 "Policies, laws and regulations",
- element 2 "Institutional strengthening and human resources development",
- element 5 "Applied research",
- element 6 "Public awareness and environmental education".

Consequently, it means that PITF will focus its efforts on element 3 of the JCP “Investment activities" for point and non-point source pollution as well as on planning and investment activities under element 4 "Management programmes for coastal lagoons and wetlands", taking into account the decisions by the HELCOM Ministerial Session in 1998 concerning the updating of the JCP.

VI Conclusions

The activities of HELCOM PITF and its subsidiary bodies in 1999 also focused on implementing the JCP and on participating in and contributing to the HELCOM Review process.

On the basis of efforts made by all Members and Observers progress in the implementation of the Programme can be stated. It is reflected, *inter alia*, by:

- decreasing discharges and emissions from most of the Hot Spots
- preparing additional action which will result in further reduction of pollution, like
  - analysis of HELCOM's role in the area of agriculture and establishment of a Working Group on Agriculture (WGA)
  - establishment of a HELCOM PITF Follow-up Project on Transport aimed at elaborating a HELCOM Recommendation on transport sector investment decision making in the Baltic Sea region
  - approval of a project proposal on Management Plans for Coastal Lagoons and Wetlands
- adoption of "Criteria for Inclusion and Deletion of Hot Spots; Procedures and guidelines for inclusion and deletion of Hot Spots"

as well as by efforts

- to start implementing the decisions made by HELCOM EXTRA 99, i.e.,
  - to revise the Terms of Reference of HELCOM PITF, Work Plan and the "Role of the Lead Party",
  - to conduct an enquiry to Member Countries of PITF to analyze the situation regarding possible changes in the List of Hot Spots based on the agreed criteria for inclusion and deletion and national assessments.

Despite of this progress, a lot remains to be done in the years to come.

Annex 1

TABLES

The Baltic Sea Joint Comprehensive Environmental Action Programme

Table 1. Activity at the Hot Spots

9. March 2000

Table 1a. Activity at the Priority Hot Spots and the other Hot Spots

	Number of Hot Spots	Technical Assistance Ongoing	Investments Ongoing
Hot Spot	68	45	36
Priority Hot Spot	47	28	21
Total	115 *)	73	57

Table 1b. Activity at the Hot Spots by site type

	Number of Hot Spots	Technical Assistance Ongoing	Investments Ongoing
Agricultural	17	11	10
Coastal lagoon	5	2	2
Industrial	37	17	12
Municipal	53	41	31
Waste treatment	3	2	2
Total	115 *)	73	57

Table 1c. Activity at the Hot Spots by country

	Number of Hot Spots	Technical Assistance Ongoing	Investments Ongoing
Belarus	3	2	
Czech	2		
Czech/Poland	1		
Denmark	4		3
Estonia	10	10	6
Estonia/Latvia	1		
Finland	4	2	4
Germany	5	5	2
Latvia	9	4	1
Lithuania	15	9	5
Lithuania/Russia	1		
Poland	34	21	16
Poland/Germany	1	1	1
Russia	16	12	12
Russia/Poland	1		
Sweden	7	7	7
Ukraine	1		
Total	115 *)	73	57

*) Originally 132 (17 Hot Spots removed)

The Baltic Sea Joint Comprehensive Environmental Action Programme

Table 2. Estimated costs and allocated/reserved resources

9. March 2000

Table 2a. Estimated costs and allocated/reserved resources at the Priority Hot Spots and other Hot Spots

	Number of Hot Spots	Estimated Investment Costs in 1992 JCP, Million EUR	New Cost Estimate in 1999, Million EUR	Allocated/Reserved Resources, Million EUR	Remaining TA/Investment Costs, Million EUR
Hot Spot	68	3044	2116	819	1138
Priority Hot Spot	47	6381	5379	643	4896
Total	115 *)	9425	7495	1462	6034

Table 2b. Estimated costs and allocated/reserved resources by sector

	Number of Hot Spots	Estimated Investment Costs in 1992 JCP, Million EUR	New Cost Estimate in 1999, Million EUR	Allocated/Reserved Resources, Million EUR	Remaining TA/Investment Costs, Million EUR
Agricultural	17	2683	2433	3	2260
Coastal lagoon	5	120	111	32	249
Industrial	36	1981	894	116	777
Municipal	54	4465	4029	1294	2736
Waste treatment	3	176	29	17	13
Total	115 *)	9425	7495	1462	6034

Table 2c. Estimated costs and allocated/reserved resources by country

	Number of Hot Spots	Estimated Investment Costs in 1992 JCP, Million EUR	New Cost Estimate in 1999, Million EUR	Allocated/Reserved Resources, Million EUR	Remaining TA/Investment Costs, Million EUR
Belarus	3	31	8	0	8
Czech	2	114	114	0	114
Czech/Poland	1				
Denmark	4	313	340	240	100
Estonia	10	1538	534	11	524
Estonia/Latvia	1	20	20	0	20
Finland	4	258	48	12	36
Germany	5	175	165	60	105
Latvia	9	417	95	42	42
Lithuania	15	497	452	120	332
Lithuania/Russia	1	30	30	0	30
Poland	34	4023	3178	465	2712
Poland/Germany	1	20	29	29	0
Russia	16	1371	1941	166	1775
Russia/Poland	1	20	2	2	0
Sweden	7	385	324	310	25
Ukraine	1	214	214	4	210
Total	115 *)	9425	7495	1462	6034

*) Originally 132 (17 Hot Spots removed)

The Baltic Sea Joint Comprehensive Environmental Action Programme

Table 3. Number of Hot Spots and the status of information received

9. March 2000

Country	Number of priority Hot Spots	Number of Hot Spots **)	Number of Priority Hot Spots information received	Total number of Hot Spots information received	Number of removed Hot Spots
Belarus	-	3	-	-	
Czech	2	2	-	-	
Czech/Poland *)	-	1	-	-	
Denmark	-	4	-	1	
Estonia	4	10	4	10	2
Estonia/Latvia *)	1	1	-	-	
Finland	-	4	-	4	6
Germany	-	5	-	4	3
Latvia	6	9	6	8	
Lithuania	5	15	4	14	
Lithuania/Russia *)	1	1	-	-	
Poland	18	34	14	26	
Poland/Germany	1	1	1	1	
Russia	7	16	7	15	1
Russia/Poland *)	1	1	1	1	
Sweden	-	7	-	7	5
Ukraine	1	1	-	-	
Total	47	115	37	91	17

*) Transboundary Hot Spots

**) Removed Hot Spots are not included

The Baltic Sea Joint Comprehensive Environmental Action Programme

Table 4. Updated information not received

9. March 2000

Key	Priority	Country	Site name	Site type	Receiving water body
15		Russia	Volkhov	Industry (Aluminium)	Lake Ladoga
37	X	Estonia/Latvia	Gulf of Riga Mgt	Coastal Lagoon / Wetland	Gulf of Riga
45		Latvia	Riga	Industry (various)	Daugava RB
47		Belarus	Vitebsk	Municipal & Industrial	Daugava RB
60	X	Lithuania	Agriculture / Livestock	Agricultural Runoff	Nemunas RB
61		Belarus	Grodno	Municipal & Industrial	Nemunas RB
66	X	Lithuania/Russia	Kursiu Lagoon	Coastal Lagoon / Wetland	Lith/Kal Coast
88	X	Poland	Katowice-East (6)	Municipal & Industiral	Vistula
90		Poland	Zgierz - Boruta Dyestuffs	Industry (Chemical)	Vistula
92		Poland	Bukowno - Boleslaw	Industry (metals)	Vistula
93		Belarus	Brest	Municipal & Industrial	Vistula
94	X	Ukraina	Lvov	Municipal & Industrial	Vistula
95	X	Poland	Agriculture / Livestock	Agricultural Runoff	Vistula
96		Poland	Upper Basin (7)	Industrial (Mining)	Vistula
104		Poland	Wroclaw	Industry (Chemical, Food, Textiles)	Oder/Odra
108	X	Poland	Katowice-West	Industry (Coke,Steel,Fertilizer)	Oder/Odra
109	X	Czech	Ostrava	Municipal & Industrial	Oder/Odra
110	X	Czech	Ostrava Area	Industry (Chemical,Pulp & Paper, etc.)	Oder/Odra
111		Czech/Poland	Upper Basin (7)	Industry (Mining)	Oder/Odra
112	X	Poland	Agriculture / Livestock	Agricultural Runoff	Oder/Odra
118		Germany	Agriculture	Agricultural Runoff	Arkona Basin
122		Denmark	Agriculture (8)	Agricultural Runoff	Belt Sea
124		Denmark	Agriculture (8)	Agricultural Runoff	
129		Denmark	Agriculture (8)	Agricultural Runoff	

Total 24 Hot Spots

The Baltic Sea Joint Comprehensive Environmental Action Programme

Table 5. Removed Hot Spots

9. March 2000

Key	Country	Site name	Site type	Receiving water body	Reason for being a Hot Spot	Reduction achieved	Year of removal
2	FI	Metsä - Botnia Oy Kemi	Industry (Pulp & Paper)	Bothnian Bay	High discharges of organic substances	Since 1991 COD over 60 %, BOD_7 over 90 %, P-tot 50 %	1994
3	SE	Husum Kraft Mill (1)	Industry (Pulp & Paper)	Bothnian Sea	High discharges of mainly AOX	Since 1987 AOX 85 %, COD 46 %, BOD 30 %, P-tot 60 %	1994
4	SE	Östrand (1)	Industry (Pulp & Paper)	Bothnian Sea	High discharges of mainly AOX	Since 1987 AOX 86 %, COD 18 %, BOD 10 %	1994
5	SE	Vallvik (1)	Industry (Pulp & Paper)	Bothnian Sea	High discharges of mainly AOX	Since 1987 AOX 90 %	1994
8	FI	Kemira Oy Vuorikemia	Industry (Titanium oxide)	Bothnian Sea	High discharges of metals		1998
11	FI	YPT Joutseno	Industry (Pulp & Paper)	Lake Saimaa	High discharges of organic substances	Since 1991 COD 10 %, AOX 70 %	1994
12	FI	Kaukas Lappeenranta	Industry (Pulp & Paper)	Lake Saimaa	High discharges of organic substances and nutrients	COD over 60 %, BOD_7 over 90 %, P-tot 70 %, AOX 80 %	1994
13	FI	E-G Kaukopää	Industry (Pulp & Paper)	Lake Saimaa	High discharges of organic substances and nutrients	COD 60 %, P-tot 60 %, BOD_7 over 60 %, AOX 40 %	1994
16	FI	Sunila Oy - Kotka	Industry (Pulp & Paper)	Gulf of Finland	High discharges of organic substances	COD 50 %, P-tot 60 %, BOD_7 70 %, AOX 60 %	1997
29	EE	Tallinn	Industry (Pulp & Paper)	Gulf of Finland	Discharges of organic substances	The factory has been closed down	1997
35	EE	Vohma Meat Combine	Industry (Food)	Gulf on Riga	Discharges of nutrients	The factory has been closed down	1997
68	RU	Pulp & Paper No 1, Kaliningrad	Industry (Pulp & Paper)	Kaliningrad	High discharges of organic substances	The mill has been closed	1998
114	DE	Greifswald	Municipal & Industrial	Arkona Basin	High discharges of nutrients	COD 93 %, BOD_5 98 %, N-tot 78 %, P-tot 93 %	1995
116	DE	Stralsund	Municipal & Industrial	Arkona Basin	High discharges of nutrients	COD 90 %, BOD_5 96 %, N-tot 75 %, P-tot 94 %	1995
121	DE	Rostock	Municipal & Industrial	Belt Sea	High discharges of nutrients	COD 92 %, BOD_5 98 %, N-tot 86 %, P-tot 96 %	1997
126	SE	Skoghall	Industry (Pulp & Paper)	Göta älv River	High discharges of mainly AOX	Since 1987 AOX 98 %, COD 25 %, BOD 17 %, N-tot 59 %, P-tot 38 %	1994
131	SE	Nymölla	Industry (Pulp & Paper)	Bornholm Basin	High discharges of nutrients	Since 1987 COD 47 %, N-tot 57 %, P-tot 52 %	1996

Total 17 Hot Spots

Key	Priority	Country	Site name	Receiving water body	Site type	Aim	Measures proposed	Year info
1		SE	Rönnskärsverken	Bothnian Bay	Industry (Metal Smelter)	Reduction of emissions (heavy matals)	Revaluation of franchise	1999
6		SE	Falun / Garpenberg	Bothnian Bay	Waste treatment (Mining)	Reduction of heavy metals	Capping of and ground water barriers on the main sources	1999
7		FI	Outokumpu Group Harjavalta	Bothnian Sea	Industry (Metal Smelter)	Reduction of metals	Improvement of processes and the waste water treatment system	1998
9		FI	Fish Farming, Åland Seas	Archipelago & Åland Seas	Fish Farming	Reduction of nutrients	Case-by-case permitting, planning	1999
10		FI	Agriculture (2)	Archipelago Sea	Agricultural Runoff	Reduction of nutrien loads by 5-10 % per year	Drawing up water protection programmes for the key regions	1999
14		RU	Syasstroi	Lake Lagoda	Industry (Pulp & Paper)	Reduction of emissions	Development of the treatment plant, technology management	1999
15		RU	Volkhov	Lake Lagoda	Industry (Aluminum)	Reduction of water and air pollution, normalization of ecological situation	Technological measures, renovation of the exixting WWTP	1998
17		FI	Helsinki Region	Gulf of Finland	Municipal	Integration of waste water treatment and improvement of the treatment capacity	Improvement of waste water treatment	1998
18	X	RU	St. Petersburg	Gulf of Finland	Municipal (Connection Sewers)	Connections of all the discharge sewers to the treatment plants	Construction and renovation of collectors	1999
19	X	RU	St. Petersburg (Urban) (3)	Gulf of Finland	Municipal & Industrial	Reduction of discharges	Treatment of municipal and industrial waste water	1999
20	X	RU	St. Petersburg (Suburban)	Gulf of Finland	Municipal & Industrial	Treatment of suburban municipal waste waste water	To develop the capacity of the existing treatment plants in biological phase	1999
21		RU	St. Petersburg	Gulf of Finland	Municipal	Phosphorous removal	Chemical and biological phosphorous removal	1999
22		RU	St. Petersburg	Gulf of Finland	Industry (Metal Plating)	Reduction of heavy metal discharges into WWTP	Proper water saving, plating and pretreatment processes	1999

Key	Priority	Country	Site name	Receiving water body	Site type	Aim	Measures proposed	Year info
23		RU	St. Petersburg	Gulf of Finland	Hazardous Waste	To arrange hazardous wastes management to avoid harm to human health and ecosystem	Incineration, physico-chemical treatment, transportation, upgrading of existing landfill	1999
24	X	RU	St. Petersburg Region	Gulf of Finland	Agriculture (Large Livestock Farms)	Development of waste water treatment orientated action programme	Dry manure wastes farming technologies and their treatment methods	1999
25	X	EE	Narva	Gulf of Finland	Industry (Oil Shale Power Plant)	Reduction of sulphur and dust emissions of the oil share power plant	Construction of full scale pilot plant for desulphurizatio n	1996
26		EE	Kohtla Järve	Gulf of Finland	Area Municipal & Industrial	Reduction of water pollution	Reconstruction of waste water treatment plant of Kohtla-Järve	1999
27		EE	Kehra	Gulf of Finland	Industry (Pulp & Paper)	Reduction of pollution load	Development of treatment facilities	1999
28	X	EE	Tallinn	Gulf of Finland	Municipal & Industrial	Reduction of pollution load	Biological-chemical treatment	1999
30		EE	Gulf of Finland	Gulf of Finland	Agricultural Runoff	Action programme for reducing agricultural runoff and ammonia emissions	Improvement of agricultural practice, demonstration activities	1999
31		EE	Haapsalu	Estonian Cost	Municipal & Industrial	Support first phase of improvements to Haapsalu water and wastewater system	Water and wastewater management with focus on strengthening of the utility	1999
32	X	EE	Matsalu Bay	Estonian Cost	Coastal Lagoon / Wetland	Development of a management plan, actions to reduce runoff impacts	Activities to reduce runoff into Matsalu Bay and environmentally sound tourism development	1999
33	X	EE	Pärnu	Gulf of Riga	Municipal & Industrial	Reduction of pollution load	Renovation of mechanical part of the biological-chamical WWTP	1999
34		EE	Paide	Gulf of Riga	Municipal & Industrial	Reduction of pollution load	Construction of wastewater treatment plant	1999

Key	Priority	Country	Site name	Receiving water body	Site type	Aim	Measures proposed	Year info
36		EE	Gulf of Riga	Gulf of Riga	Agricultural Runoff	Sustainable agriculture, focused on demonstration, education and information act	Management of agricultural runoff	1999
37	X	EE/LV	Gulf of Riga Mgt	Gulf of Riga	Coastal Lagoon / Wetland	To ensure sustainable development between planned industry and nature	Realization of appropriate management plan	1995
38	X	LV	Sloka	Gulf of Riga	Industry (Pulp & Paper)	Reduction of the pollution load to the Lielupe River	Updating of the technology and local waste water treatment improvement	1999
39	X	LV	Latbiofarm	Gulf of Riga	Industry (Pharmaceutical)	Reduction of surface water, groundwater, and air pollution from industry	Introduction of cleaner technologies, recycling, partly separate waste water treatment, waste incine	1998
40	X	LV	Agriculture / Livestock	Gulf of Riga	Agricultural Runoff	Reduction of pollution load	Introduction of new management methods	1999
41	X	LT	Siauliai	Gulf of Riga	Municipal & Industrial	Reduction of pollution load	Environmental management for the Siauliai and the Lithuania portion of the Lielupe River Basin	1999
42	X	LV	Riga (WWTP Phase II)	Daugava RB	Municipal & Industrial	Reduction of the pollution load to the Daugava river	Construction the second stage of the wastewater treatment plant with capacity 100000 m3/day	1999
43		LV	VEF Plant (Riga)	Daugava RB	Industry (Metals)	Reduction of pollution from galvanic shops	Cleaner technology in galvanic production	1999
44		LV	RER Plant (Riga)	Daugava RB	Industry (Metals)	Reduction of pollution from galvanic shop	Cleaner technology in galvanic production	1999
45		LV	Riga	Daugava RB	Industry (Various)	Reduction of pollution load	Waste minimization	1995
46	X	LV	Daugavpils	Daugava RB	Municipal & Industrial	Reduction of pollution of Daugava River	Construction of a wastewater treatment plant with biological wastewater treatment	1999
47		BY	Vitebsk	Daugava RB	Municipal & Industrial			

Key	Priority	Country	Site name	Receiving water body	Site type	Aim	Measures proposed	Year info
48	X	LV	Liepaja (3)	Latvian Coast	Municipal & Industrial	Reduction of pollution load	Completion of the construction of the second stage of the WWTP	1999
49	X	RU	Sovetsk	Nemunas RB	Industry (Pulp & Paper)	Reduction of pollution load	Development of technology, construction of a unified WWTP	1999
50	X	RU	Neman	Nemunas RB	Industry (Pulp & Paper)	Reduction of pollution load	Development of technology, construction of wastewater treatment plant	1999
51	X	LT	Kaunas	Nemunas RB	Municipal & Industrial	Reduction of pollution load	Construction of the wastewater treatment plant and sewerage system	1999
52		LT	Amalg Azotaz	Nemunas RB	Industry (Fertilizer)	Reduction of pollution load	To construct 1) station for trapping contaminated subterranean water 2) WWTP 3) to introduce technology	1999
53		LT	Kedainiai	Nemunas RB	Municipal & Industrial	Reduction of pollution load	Development of municipal and industrial wwt	1999
54		LT	Kedainiai	Nemunas RB	Industry (Chemicals)	Reduction of pollution load	Modernisation of the process of crude oil combustion	1999
55		LT	Panevezys	Nemunas RB	Municipal & Industrial	Reduction of pollution load	Development of municipal and industrial wwt	1999
56		LT	Panevezys	Nemunas RB	Industry (Food)	Reduction of pollution load	To investigate technological schemes for water utilization, operation of water treatment equipments	1999
57		LT	Marijampole	Nemunas RB	Municipal & Industrial	Reduction of pollution load	Treatment of municipal and industrial waste water	1999

Key	Priority	Country	Site name	Receiving water body	Site type	Aim	Measures proposed	Year info
58		LT	Alytus	Nemunas RB	Municipal & Industrial	Reduction of pollution load	Finish the reconstruction of wastewater treatment plant	1999
59	X	LT	Vilnius / Grigiskes	Nemunas RB	Municipal & Industrial	Reduction of waste disposal	Biological wastewater treatment 1996	1999
60	X	LT	Agriculture / Livestock	Nemunas RB	Agricultural Runoff	Reduction of pollution load	Demonstration Programs	1996
61		BY	Grodno	Nemunas RB	Municipal & Industrial	To establish a control system for reducing disharges from industrial sources	Establishment of a control system for water supply and sewage	1996
62		LT	Mazeikiai	Lithuanian Coast	Oil Refinery / Marine Terminal	Reduction of pollution load	1) Reconstruction of the Plant 2) Construction of wastewater treatment plant	1999
63	X	LT	Klaipeda	Lithuanian Coast	Municipal & Industrial	Reduction of pollution load	Completion of the construction of the wastewater treatment plant	1999
64		LT	Cardboard Factory	Lithuanian Coast	Industry (Paper)	Reduction of pollution load	Wastewater treatment	1999
65		LT	Palanga	Lithuanian Coast	Municipal	Reduction of pollution load	Construction of the biological treatment plant	1999
66	X	LT/RU	Kursiu Lagoon	Lith/Kal Coast	Coastal Lagoon / Wetland	Development of management plan for coast and environmentally sound tourism development.	A management program with supporting small-scale investments	1998
67	X	RU	Kaliningrad	Kaliningrad	Municipal & Industrial	Improvement of ecological situation	Renovation of sewage system, finalizing of the construction of wastewater treatment plant	1999
69		RU	Pulp & Paper No 2 (4),Kaliningrad	Kaliningrad	Industry (Pulp & Paper)	Reduction of pollution load	Development of technology, renovation of wastewater operation	1999
70		RU	Kaliningrad	Kaliningrad	Hazardous Waste	To minimize the negative effect of wastes handling	To establish a special industrial wastes handling site and incineration	1999

Key	Priority	Country	Site name	Receiving water body	Site type	Aim	Measures proposed	Year info
71		RU	Oil Bunkering Station	Kaliningrad	Industry (Oil storage)	Elimination of oil pollution	Development of oily water treatment plant and technical equipments of the oil terminal	1999
72		RU	Agriculture / Livestock	Kaliningrad	Agricultural Runoff	Reduction of discharges from point sources	Development of local wastewater treatment plants, utilization of manure	1999
73	X	RU/PL	Vistula Lagoon	Kal/Pol Coast	Coastal Lagoon / Wetland	Reduction of pollution load	Environmental Management Programme and construction of several WWWTPs in the area	1999
74	X	PL	XXXII. Koszalin - Jamno	Baltic Coast of Poland	Municipal & Industrial	Reduction of nutrient compounds	To uppgrade constructed WWTP	1999
75	X	PL	Gdynia - Debogorze	Baltic Coast of Poland	Municipal & Industrial	Reduction of nutrient compounds	To uppgrade constructed WWTP	1999
76	X	PL	Gdansk - Wschod, Oil Refinery	Baltic Coast of Poland	Municipal & Industrial	Reduction of pollution load	To categorize the contaminated sites and set up action plans for clean-up	1999
77		PL	Swiecie	Vistula	Industry (Pulp & Paper)	Reduction of pollution load	Modernization the existing wastewater treatment plant	1999
78	X	PL	Bydgoszcz - Fordon	Vistula	Municipal & Industrial	Reduction of nutrient compounds	To upgrade existing WWTP	1999
79		PL	Bydgoszcz - Kapusciska	Vistula	Municipal & Industrial	Reduction of discharges and emissions	Wastewater treatment, air pollution control, waste management	1999
80	X	PL	Torun	Vistula	Municipal & Industrial	Reduction of discharges and emissions	Finish construction of WWTP	1999
81	X	PL	Wloclawek - Anwil	Vistula	Industries (Chemical)	Reduction of discharges and emissions	Wastewater treatment, air pollution control	1999
82		PL	Warsaw - Czajka	Vistula	Municipal & Industrial	Reduction of discharges	Finish construction of WWTP	1999

Key	Priority	Country	Site name	Receiving water body	Site type	Aim	Measures proposed	Year info
83	X	PL	Warsaw - Poludnie, Siekierki	Vistula	Municipal & Industrial	Reduction of discharges and emissions	Construction of WWTP, installation of desulphuration and de-Nox-equipment	1999
84		PL	Warsaw - Pancerz	Vistula	Municipal & Industrial	Reduction of discharges	Construction of WWTP	1999
85		PL	Lublin - Hajdow	Vistula	Municipal & Industrial	Reduction of nutrient compounds at the Hajdow sewage treatment plant	Finish upgrading of WWTP	1999
86	X	PL	Krakow - Plaszow	Vistula	Municipal & Industrial	Reduction of discharges	Sewage treatment plant expansion	1999
87	X	PL	Krakow - Kujawy, T. Sendzimir Steel Plant	Vistula	Municipal & Industrial	Reduction of air pollution, waste and wastewater	Construction of WWTP, air pollution control, waste management	1999
88	X	PL	Katowice -East (6)	Vistula	Municipal & Industrial	River Vistula protection - environmental improvement	Project funding	1998
89		PL	Jaworzno Organica Azot	Vistula	Industry (Chemical)	Reduction of air pollution, waste and waste water	Waste water treatment, air pollution control, waste management	1999
90		PL	Zgierz - Boruta Dyestuffs	Vistula	Industry (Chemical)	Reduction of discharges	Wastewater treatment	1998
91		PL	Oswiecim - Dwory	Vistula	Industry (Chemical)	Reduction of air pollution and waste water	Waste water treatment and air pollution control	1999
92		PL	Bukowno-Boleslaw	Vistula	Industry (Metals)	Reduction of air pollution, waste and waste water	Air pollution control, wastewater treatment, waste management	1998
93		BY	Brest	Vistula	Municipal & Industrial	Reduction of pollution load	Treatment of municipal and industrial waste water	1996
94	X	UA	Lvov	Vistula	Municipal & Industrial	Reduction of pollution load by 30 %	Modern equipment for the WWTP	1996
95	X	PL	Agriculture / Livestock	Vistula	Agricultural Runoff	Better management in agricultural sector	Demonstration Programs	1996
96		PL	Upper Basin (7)	Vistula	Industrial (Mining)	Reduction of saline mining water discharges from hard coal mines	Salt control	1996
97	X	PL	Szczecin - Pomorzany	Oder/Odra	Municipal & Industrial	Reduction of discharges	Construction of WWTP	1999
98	X	PL	Szczecin - Police, Skolwin	Oder/Odra	Industry (Fert.,P & P)	Reduction of emissions	Wastewater treatment, air pollution control, waste management	1999

Key	Priority	Country	Site name	Receiving water body	Site type	Aim	Measures proposed	Year info
99		PL	Poznan	Oder/Odra	Municipal & Industrial	Reduction of discharges	Expansion and upgrading of existing WWTP	1999
100	X	PL	Lodz	Oder/Odra	Municipal & Industrial	Reduction of discharges	Construction of WWTP	1999
101		PL	Zielona Gora	Oder/Odra	Municipal & Industrial	Reduction of the loads of BOD_5, N and P	Construction of WWTP	1999
102	X	PL	Legnica-Glogow	Oder/Odra	Industry	Reduction of discharges and emissions	Waste water management, air pollution control, waste management	1999
103		PL	Wroclaw	Oder/Odra	Municipal & Industrial	Reduction of discharges	Constructions of municipal sewers and WWTP	1999
104		PL	Wroclaw	Oder/Odra	Industry (Chemical,Food,Textiles)	Reduction of discharges and emissions	Waste water management, air pollution control, waste management	1998
105		PL	Ubocz - Luban	Oder/Odra	Industry (Fertilizer)	Reduction of discharges	Waste water treatment	1999
106		PL	Boleslawiec - Wizow	Oder/Odra	Industry (Fertilizer)	Reduction of P load	Modernization of water management in the plant	1999
107	X	PL	Katowice-West	Oder/Odra	Municipal & Industrial	Reduction of discharges	Project funding	1999
108	X	PL	Katowice-West	Oder/Odra	Industry (Coke,Steel,Fertilizer)	Reduction of discharges and emissions	Salinity, heavy metals, air pollution control, waste management, waste water treatment	
109	X	CS	Ostrava	Oder/Odra	Municipal & Industrial	Joint treatment of municipal and industrial waste waters	I Preparation of the area for construction; II Mechanical treatment; III Construction of biological treatment plant	
110	X	CS	Ostrava Area	Oder/Odra	Industry (Chemical,Pulp & Paper, etc.)	Elaboration and impl. of a strat. for cost effective water pollution abatement	Priority list for treatment measures	
111		CS/PL	Upper Basin (7)	Oder/Odra	Industry (Mining)	Reduction of saline mining water discharges from hard coal mines	Salt control	1996
112	X	PL	Agriculture / Livestock	Oder/Odra	Agricultural Runoff	Better management in agricultural sector	Demonstration Programs	1996
113	X	PL/DE	Odra Lagoon mgt	Oder/Odra	Coastal Lagoon / Wetland	Reduction of pollution load	Environmental Management Programme	1999

Key	Priority	Country	Site name	Receiving water body	Site type	Aim	Measures proposed	Year info
115		DE	Neubrandenburg	Arkona Basin	Municipal & Industrial	Reductions of organic pollution and inputs of N and P	Expansion of biology, P eliminatoin, sludge treatment	1999
117		DE	Stavenhagen - Malchin	Arkona Basin	Municipal & Industrial	Reductions of organic pollution and inputs of N and P	Expansion of biology, P eliminatoin, sludge treatment	1999
118		DE	Agriculture	Arkona Basin	Agricultural Runoff	Reduction of pollution load	Further information of good agricultural practice, water pollution control	1996
119		DE	Lübeck	Belt Sea	Municipal & Industrial	Reduction of N and P discharges	Nitrification/denitrification, biological P elimination	1999
120		DE	Wismar	Belt Sea	Municipal & Industrial	Reduction of organic pollution and inputs of N and P	Expansion fo biology, P elimination, sludge treatment	1999
122		DK	Agriculture (8)	Belt Sea	Agricultural Runoff	Reduction of pollution load	Agricultural Runoff Programme (Belt Sea)	1995
123		DK	Copenhagen	The Sound	Municipal	Reduction of discharges of N and P	The plant is to rebuild in order to reduce nutrients.	1999
124		DK	Agriculture (8)	The Sound	Agricultural Runoff	Reduction of pollution load	Agricultural Runoff Programme (the Sound)	1998
125		SE	The Swedish Sound Area	The Sound	Agricultural Runoff	Reduction of nutrient leaching	Limit to animal density, winter green fields, increase storage cap and restrict handling of manure	1999
127		SE	Göteborg Archipelago	Kattegat	Municipal	Reduction of discharge of N and P	Upgrading of treatment plant	1999
128		SE	Laholm Area	Kattegat	Agricultural Runoff	Reduction of nutrient leaching	Limit to animal density, winter green fields, increase storage cap and restrict handling of manure	1999

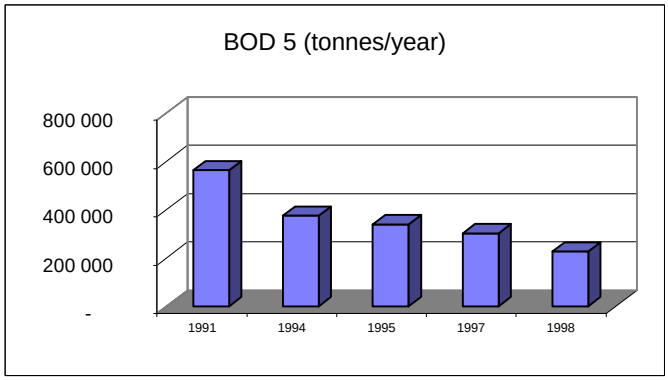
Key	Priority	Country	Site name	Receiving water body	Site type	Aim	Measures proposed	Year info
129		DK	Agriculture (8)	Kattegat	Agricultural Runoff	Reduction of pollution load	Agricultural Runoff Programme (Kattegat)	1998
130		SE	Stockholm	Swedish Coast	Municipal	Reduction of discharge of N and P	Upgrading of treatment plant	1999
132		SE	Kristianstad Area	Bornholm Basin	Agricultural Runoff	Reduction of nutrient leaching	Limit to animal density, winter green fields, increase storage cap and restrict handling of manure	1999

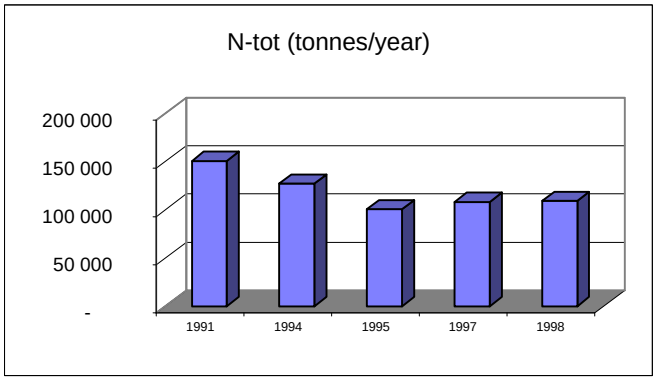
Total 115 Hot Spots

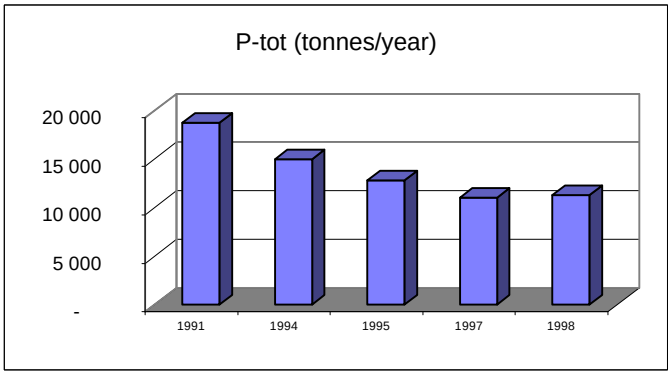
The Baltic Sea Joint Comprehensive Environmental Action Programme

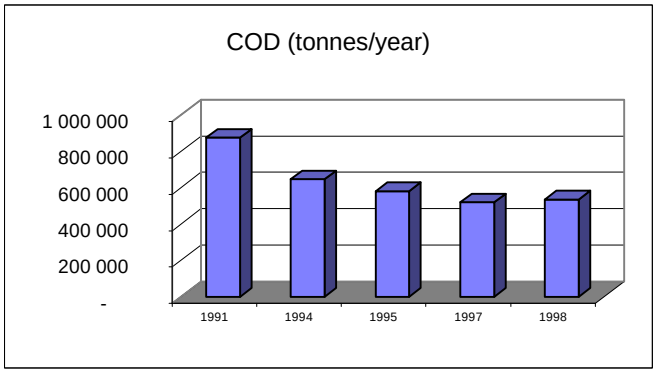
Table 7, Waste water discharges from reported Hot Spots

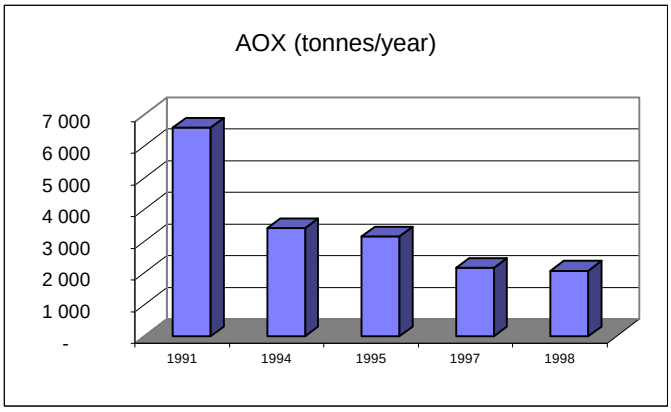
9. March 2000











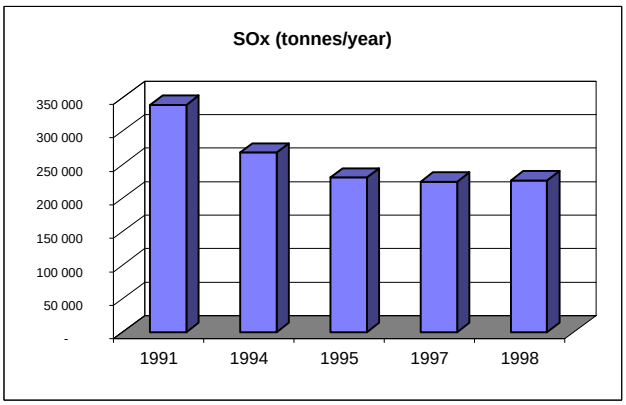
Year	BOD $_5$ (tonnes/year)	P-tot (tonnes/year)	N-tot (tonnes/year)	COD (tonnes/year)	AOX (tonnes/year)
1991	564 223	18 733	150 785	874 695	6 584
1994	375 943	14 957	127 419	645 604	3 409
1995	340 047	12 788	100 860	580 904	3 143
1997	302 598	11 012	108 309	519 397	2 159
1998	227 257	11 313	109 211	534 786	2 064
Reduction %	59,7	39,6	27,6	38,9	68,7

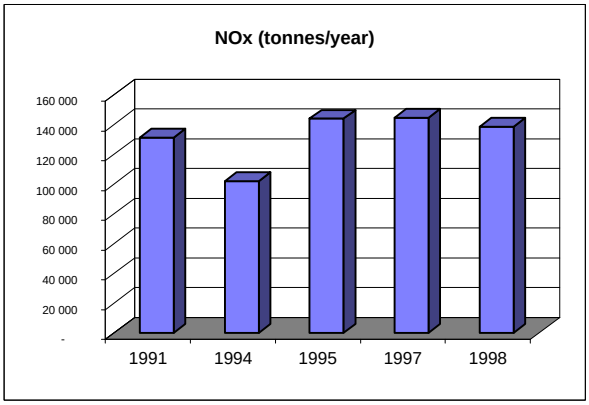
NOTE: The information is from the tables 9a - 9e summary rows.

The Baltic Sea Joint Comprehensive Environmental Action Programme

Table 8, Air emissions from reported Hot Spots

9. March 2000





Year	SO_x (tonnes/year)	NO_x (tonnes/year)
1991	338 708	131 346
1994	267 673	101 968
1995	230 257	143 973
1997	224 167	144 564
1998	225 824	138 552
Reduction (%)	33,3	-5,5

NOTE: The information is from the tables 9f and 9g summary rows.

Key	Site name	Receiving water body	BOD_5 (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
1	Rönnskärsverken	Bothnian Bay							
2	Metsä - Botnia Oy Kemi	Bothnian Bay	6110	*3723*	538	529	457	**deleted hot spot** *& 1994 = data 1993*	FFIF -92 & -96 & -98 & -99
3	Husum Kraft Mill (1)	Bothnian Bay	8522	*7478*	9217	6798	7696	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
4	Östrand (1)	Bothnian Bay	4261	*5478*	5174	4947	4195	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
5	Vallvik (1)	Bothnian Bay	2609	2870	2755	2512	2417	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
6	Falun / Garpenberg	Bothnian Bay							
7	Outokumpu Group Harjavalta	Bothnian Bay							Finnish Environmet Institute 1999
8	Kemira Oy Vuorikemia	Bothnian Bay						**deleted hot spot**	
9	Fish Farming, Åland Seas	Archipelago & Åland Seas							
10	Agriculture (2)	Archipelago Sea							
11	YPT Joutseno	Gulf of Finland	1464	*1162*	993	261	270	**deleted hot spot** *& 1994 = data 1993*	FFIF -92 & -96 & -98 & -99
12	Kaukas Lappeenranta	Gulf of Finland	4538	*540*	477	1408	1198	**deleted hot spot** *& 1994 = data 1993*	FFIF -92 & -96 & -98 & -99
13	E-G Kaukopää (Imatra)	Gulf of Finland	13566	1337	1762	2019	2264	**deleted hot spot** *& 1994 = data 1993*	FFIF -92 & -96 & -98 & -99
14	Syasstroi	Lake Lagoda	1100	451	678	170	170	was 9 months in a standstill in 1997, BOD info is lacking, 1997 = 0,25 * 1995, in 1998 there was a break down of dam	MEF 91, quest. 98, quest . 99
15	Volkhov	Lake Lagoda	22	62	5	3	3	1998 = 1997	MEF 91, quest. 98
16	Sunila Oy - Kotka	Gulf of Finland	4540	4700	1687	364	241	**deleted hot spot**	FFIF -92 & 96 + quest 95, FFIF -98 & -99
17	Helsinki Region	Gulf of Finland	1110	1255	763	645	1016		SEPA 96 + quest. 95 & 96 & 98
18	St. Petersburg	Gulf of Finland							
19	St. Petersburg (Urban) (3)	Gulf of Finland							
20	St. Petersburg (Suburban)	Gulf of Finland							
21	St. Petersburg	Gulf of Finland							
22	St. Petersburg	Gulf of Finland							
23	St. Petersburg	Gulf of Finland							
24	St. Petersburg Region	Gulf of Finland							
25	Narva	Gulf of Finland			279	441	186	**atmospheric pollution**	Min. of Env. 1999
26	Kohtla Järve	Gulf of Finland	2439	969	657	626	643	*1991 = data1992*	quest. 98
27	Kehra	Gulf of Finland	610	150	43	102	87		
28	Tallinn	Gulf of Finland	9852	1287	504	340	255		Min. of Env. 1999
29	Tallinn	Gulf of Finland						**deleted hot spot**	
30	Gulf of Finland	Gulf of Finland							
31	Haapsalu	Estonian Cost	139	70	52	50	3		
32	Matsalu Bay	Estonian Cost	162	50	45	43	43	1998=1997	
33	Pärnu	Gulf of Riga	186	145	53	47	35		
34	Paide	Gulf of Riga	657	27	23	34	17		
35	Vohma Meat Combine	Gulf of Riga	140	10	10	10	10	**deleted hot spot** 1998=1997=1995=1994	
36	Gulf of Riga	Gulf of Riga							
37	Gulf of Riga Mgt	Gulf of Riga	75000	75000	75000	75000	75000	1998 = 1997 = 1995 = 1994 =1991	DEPA 94, 1998 no data available
38	Sloka	Gulf of Riga	120	22	31	37	16	Production of pulp and paper is ceased, the plant is privatised	DEPA 94 + HELCOM bureau of Latvia, 1998
39	Latbiofarm	Gulf of Riga	130	55	29	28	15	BOD 5 1994 calculated from given BOD 20 in quest.	HELCOM bureau of Latvia, 1998
40	Agriculture / Livestock	Gulf of Riga							
41	Siauliai	Gulf of Riga	2900	2500	510	93	98	1991 = data1992,	
42	Riga (WWTP Phase II)	Daugava RB	19998	4105	5088	5355	520	6247 BOD_7 = 5355 BOD_5	quest. 95 +HELCOM Bureau of Latvia 1998
43	VEF Plant (Riga)	Daugava RB	0,4	0,4	0,4	0,4	0,4	BOD 5 1995 calculated from given BOD 20 in quest. 1998=1997 = 1995 = 1994 = 1991	
44	RER Plant (Riga)	Daugava RB	1,0	0,6	0,7	1,7	0,8	2 BOD_7 = 1,7 BOD_5	quest. 95 +HELCOM Bureau of Latvia 1998
45	Riga	Daugava RB							

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spot " in 1999.

Key	Site name	Receiving water body	BOD_5 (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
46	Daugavpils	Daugava RB	3627	1215	1185	1649	1367		SEPA 96 (BOD 5 1991 & 1994) & HELCOM bureau of Latvia, 1998
47	Vitebsk	Daugava RB	506	441	441	441	441	figures represent part of the Hot Spot, 1998 = 1997 = 1995 = 1994	quest. 95 & 96
48	Liepaja (3)	Latvian Coast	924	705	541	95	168		SEPA 96 (BOD 5 1991 & 1994) & HELCOM bureau of Latvia, 1998
49	Sovetsk	Nemunas RB	35000	2279	2557	2848	1616	BOD 5 1994 calculated from given BOD 20 in quest.	
50	Neman	Nemunas RB	5300	332	994	638	62	BOD 5 1994 calculated from given BOD 20 in quest.	
51	Kaunas	Nemunas RB	13343	7330	5848	4551	6278		
52	Amalg Azotaz	Nemunas RB	53	10	15	5	7		
53	Kedainiai	Nemunas RB	137	18	27	33	43		
54	Kedainiai	Nemunas RB	6	8	11	9	15		
55	Panevezys	Nemunas RB	677	384	232	349	310		
56	Panevezys	Nemunas RB	3100	3100	1837	1837	1837	1991 = 1994, 1998=1997 = 1995	
57	Marijampole	Nemunas RB	99	99	89	175	143	1991 = 1994	SEPA 96 (BOD 5 1994) & quest.96
58	Alytus	Nemunas RB	1136	246	148	131	246		SEPA 96 (BOD 5 91 & 94)
59	Vilnius / Grigiskes	Nemunas RB	12900	7500	6718	861	787		SEPA 96 (BOD 5 95), quest99
60	Agriculture / Livestock	Nemunas RB							
61	Grodno	Nemunas RB	680	680	386	386	386	1994 = 1991, 1998=1997 = 1995	SEPA 96 (BOD 5 95)
62	Mazeikiai	Lithuanian Coast	110	82	65	38	21		
63	Klaipeda	Lithuanian Coast	4100	2477	2611	2838	2906		SEPA 96 (BOD 5 91 & 94)
64	Cardboard Factory	Lithuanian Coast	6100	0	0	0	0	Since 1994 operatins of the factory has been stopped	Helcom 1992
65	Palanga	Lithuanian Coast	513	179	188	252	191	294 BOD_7 = 252 BOD_5	SEPA 96 (BOD 5 91 & 94)
66	Kursiu Lagoon	Lith/Kal Coast	160000	140000	140000	140000	140000	1994 = 1995 = 1997 = 1998	DEPA 1994, no information from 1998
67	Kaliningrad	Kaliningrad	39557	13593	20390	13622	6286	BOD 5 1994 calculated from given BOD 20 in quest.	SEPA 96 (BOD 5 91)
68	Pulp & Paper No 1, Kaliningrad	Kaliningrad	5700	651	3147	149	149	**deleted hot spot, 1998 = 1997**	
69	Pulp & Paper No 2 (4),Kaliningrad	Kaliningrad	6000	2283	3759	4733	2363	BOD 5 1994 calculated from given BOD 20 in quest.	
70	Kaliningrad	Kaliningrad							
71	Oil Bunkering Station	Kaliningrad	2	1	1	1	1	1998=1997 = 1995	
72	Agriculture / Livestock	Kaliningrad							
73	Vistula Lagoon	Kal/Pol Coast	6700	6300	5490	5077	4029		Min. of the Env. in Poland
74	XXXII. Koszalin - Jamno	Baltic Coast of Poland	6244	160	292	110	96		SEPA 96 (BOD 5 1991 & 1995)
75	Gdynia - Debogorze	Baltic Coast of Poland	5110	1280	513	438	332		SEPA 96 (BOD 5 1991 & 1994)
76	Gdansk - Wschod, Oil Refinery	Baltic Coast of Poland	7064	4357	4574	4131	4274		SEPA 96 (BOD 5 1991 & 1994)
77	Swiecie	Vistula	7000	4500	5990	3465	2518		
78	Bydgoszcz - Fordon	Vistula	5700	5215	12	3572	3150		SEPA 96 (BOD 5 1991 & 1994)+ quest. 96
79	Bydgoszcz - Kapusciska	Vistula	4189	4189	4189	4189	4100	1991 = 1994 = 1995 = 1997	
80	Torun	Vistula	5292	5712	3626	5309	181		SEPA 96 (BOD 5 1991 & 1994)
81	Wloclawek - Anwil	Vistula	300	119	39	39	25	1997 = 1995	SEPA 96 (BOD 5 1991 & 1994)
82	Warsaw - Czajka	Vistula	1400	2700	1624	3054	1427		
83	Warsaw - Poludnie, Siekierki	Vistula	9313	10220	10220	7334	11152	1994 = 1995	SEPA96 (BOD 5 1991 & 1995)+ quest. 96
84	Warsaw - Pancerz	Vistula	45625	45625	45000	38018	38018		SEPA 96 (BOD 5 1991 & 1994)+ quest.95 & 96

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spot " in 1999.

Key	Site name	Receiving water body	BOD_5 (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
85	Lublin - Hajdow	Vistula	5330	707	483	788	639		SEPA 96 (BOD 5 1991 & 1994)+ quest. 96
86	Krakow - Plaszow	Vistula	10900	10960	9867	12273	14257		SEPA 96 (BOD 5 1994)+ quest.96
87	Krakow - Kujawy, T. Sendzimir Steel Plant	Vistula	5000	4600	3192	2837	3987		SEPA 96 (BOD 5 1991 & 1994)+ quest. 96
88	Katowice -East (6)	Vistula	28910	36900	36900	36900	36900	1998=1997 = 1995 = 1994	DEPA 94
89	Jaworzno Organica Azot	Vistula	11	6	11	5	5		
90	Zgierz - Boruta Dyestuffs	Vistula							
91	Oswiecim - Dwory	Vistula	180	180	70	75	135	1991 = 1994	
92	Bukowno - Boleslaw	Vistula							
93	Brest	Vistula	690	290	166	166	166	1991 = data1993, 1998=1997 = 1995	quest. 94, 95 & 96 + SEPA 96 (BOD 5 1995)
94	Lvov	Vistula	71000	64000	59600	59600	2500	1997 = 1995	DEPA 94, +quest.96, SEPA99.
95	Agriculture / Livestock	Vistula							
96	Upper Basin (7)	Vistula							
97	Szczecin - Pomorzany	Oder/Odra	22500	22000	7000	7000	3463	1997 = 1995	SEPA 96 (BOD 5 1991 & 1994) + quest. 96
98	Szczecin - Police, Skolwin	Oder/Odra	610	280	433	779	779	1998=1997	
99	Poznan	Oder/Odra	9843	8297	9909	12002	11223		quest. 95 & 96 + SEPA 96 (BOD 5 1991 & 1994)
100	Lodz	Oder/Odra	17999	10998	14550	17449	13178		quest. 96 + SEPA 96 (BOD 5 1991 & 1994)
101	Zielona Gora	Oder/Odra	2358	2150	1241	909	873		quest. 96 + SEPA 96 (BOD 5 1991 & 1994)
102	Legnica-Glogow	Oder/Odra	79	260	260	260	260	1994 = 1995 = 1997	
103	Wroclaw	Oder/Odra	4701	3713	395	243	7680		quest. 96 + SEPA 96 (BOD 5 1991 & 1994)
104	Wroclaw	Oder/Odra	6200	4600	28	13	13	1998=1997	
105	Ubocz - Luban	Oder/Odra	0,3	0,3	0,3	0	0	1991 = 1994 = 1995	
106	Boleslawiec - Wizow	Oder/Odra					0		
107	Katowice-West	Oder/Odra	17160	15480	15480	199	105	**1995 = 1994**	DEPA 94
108	Katowice-West	Oder/Odra	670	670	670	670	670	1998=1997 = 1995 = 1994 = 1991	DEPA 94
109	Ostrava	Oder/Odra	2403	1218	1218	1218	1218	1998=1997 = 1995 = 1994	DEPA 94
110	Ostrava Area	Oder/Odra	2300	1427	1427	1427	1427	1998=1997 = 1995 = 1994	DEPA 94
111	Upper Basin (7)	Oder/Odra							
112	Agriculture / Livestock	Oder/Odra							
113	Odra Lagoon mgt	Oder/Odra	1900	1900	1100	1071	940		quest. 95 & 96 + SEPA 96 (BOD 5 1991 & 1995)
114	Greifswald	Arkona Basin	990	17	17	17	17	**deleted hot spot**, 1998=1997 = 1995	German proposal to remove Hot Spots no.114 & 116
115	Neubrandenburg	Arkona Basin	350	200	200	70	40	1995 = 1994	quest. 95, 96 & 98 + SEPA 96 (BOD 5 1991 & 1994)
116	Stralsund	Arkona Basin	2030	71	71	71	71	**deleted hot spot, 1998=1997**	German proposal to remove Hot Spots no.114 & 116
117	Stavenhagen - Malchin	Arkona Basin	50	32	32	120	24	1991 & 1994 SEPA, 1995 = 1994	quest. 95 & 96 + SEPA 96 (BOD 5 1991 & 1994)
118	Agriculture	Arkona Basin	6078	6078	6078	6078	6079	1991 = 1994 = 1995 = 1997=1998	quest.96, no changes between 1994 and 1995
119	Lübeck	Belt Sea							Report for the deletion of hot spots 119.1 & 119.2
	119.1	Belt Sea	41	4	4	4	288	1991 = data 1987, 1997 = 1995 = 1994	+ SEPA 96 (BOD 5 1994)
	119.2	Belt Sea	17	8	8	8	8	1991 = data 1987, 1998=1997 = 1995 = 1994	
	119.3	Belt Sea	178	178	238	191	191	1991 = 1994, 1998=1997	
120	Wismar	Belt Sea	250	170	170	180	123	1995 = 1994	quest.95+ SEPA 96 (BOD 5 1991 & 1994)
121	Rostock	Belt Sea	5500	2600	2600	2600	2600	**deleted hot spot**, 1998=1997 = 1995	
122	Agriculture (8)	Belt Sea							
123	Copenhagen	The Sound	2600	1500	1713	265	98		
124	Agriculture (8)	The Sound							

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spot " in 1999.

The Baltic Sea Joint Comprehensive Environmental Action Programme

Table 9 a. Inventory Table on Waste Water Discharges - BOD_5

Key	Site name	Receiving water body	BOD_5 (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
125	The Swedish Sound Area	The Sound							
126	Skoghall	Kattegat	5391	4957	3428	2424	2074	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
127	Göteborg Archipelago	Kattegat	2300	2300	2200	2200	2200	1991 = 1994, 1998=1997 = 1995	quest.95 & 96 + SEPA 96
128	Laholm Area	Kattegat							
129	Agriculture (8)	Kattegat							
130	Stockholm	Swedish Coast	1609	1609	1113	1113	1113	1991 = 1994, 1998=1997 = 1995	quest.95 & 96 + SEPA 96
131	Nymölla	Bornholm Basin	6174	1400	677	327	146	**deleted hot spot**	SNV 92 & 96 & 98 & 99
132	Kristianstad Area	Bornholm Basin							
SUM			**807985**	**599193**	**561682**	**523789**	**447269**		
SUM Without Coastal Lagoons			**564223**	**375943**	**340047**	**302598**	**227257**		

ABBREVIATIONS USED FOR SOURCES

SNV 92 Statens naturvårdsverket (Swedish EPA), Rapport 4086 : Skogsindustrins emissioner till vatten och luft 1991 (Forest industry emissions to water and air 1991), July 1992

SNV 96 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins emissioner till vatten och luft 1995 (Forest industry emissions to water and air 1995).

SNV 98 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins utsläpp till vatten och luft 1996 (Forest industry emissions to water and air 1996), April 1998.

SNV 99 Naturvårdsverket: Skogsindustrins utsläpp till vatten och luft samt avfallsmängder och energiförbrukning 1998 (Forest industry emissions to water and air 1998), August 1999.

FFIF 92 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1992 (Ympäristösuojelun Vuosikirja, 1992).

FFIF 96 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1996 (Ympäristönsuojelun vuosikirja, 1996)

FFIF 98 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1998 (Ympäristönsuojelun vuosikirja, 1998)

FFIF 99 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1999 (Ympäristönsuojelun vuosikirja, 1999)

MEF 91 Ministry of the Environment of Finland, Environmental priority action programme for Leningrad, Leningrad region Karelia and Estonia, Pre-feasibility study No 7 : Reduction of the environmental effects of Syasstroy pulp and paper mill and Volkhov aluminium factory, 1991.

DEPA 94 Danish Environmental Protection Agency and KCCV, Hot Spot Review - Vol 1, Executive Summary.Baltic Sea Environment Programme, Nov. 1994

SEPA 96 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1996.

SEPA 99 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1999.

Helcom 92 Conference Document No. 5/3 : The Baltic Sea Joint Comprehensive Environmental Action Programme, Diplomatic Conference on the Protection of the Marine Environment of the Baltic Sea Area, April 1992.

quest. 95 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1995.

quest. 96 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1996.

quest. 98 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1998.

quest. 99 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1999.

EBRD 99 Information on revision of JCP hot spots related to municipal services of St. Petersburg. Proposal for deletion of the JCP hot spot No 21. ("Removal of Phosphorous from waste water" St. Petersburg, municipal")

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spot " in 1999.

Table 9 b. Inventory Table on Waste Water Discharges - Phosphorous

Key	Site name	Receiving water body	P- Tot (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
1	Rönnskärsverken	Bothnian Bay							
2	Metsä - Botnia Oy Kemi	Bothnian Bay	22,0	15,0	17,0	14,0	110,0	**deleted hot spot**	FFIF -92 & -96 -98 & -99
3	Husum Kraft Mill (1)	Bothnian Bay	42,0	30,0	34,0	34,4	32,0	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
4	Östrand (1)	Bothnian Bay	20,0	22,0	21,7	17,9	20,0	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
5	Vallvik (1)	Bothnian Bay	10,0	10,0	8,8	7,5	9,0	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
6	Falun / Garpenberg	Bothnian Bay	4,3	4,3	4,3	4,3	3,3	1991 = 1994 = 1995	
7	Outokumpu Group Harjavalta	Bothnian Bay							Finnish Environment Institute 1999
8	Kemira Oy Vuorikemia	Bothnian Bay	6,7	7,0	8,0	2,2	2,2	**deleted hot spot** 1991 = 1994, 1998=1997	quest. 96, call to Kai Forsius 1998
9	Fish Farming, Åland Seas	Archipelago & Åland Seas	128,0	110,0	90,0	71,0	70,0		
10	Agriculture (2)	Archipelago Sea	340,0	310,0	310,0	310,0	310,0	1998=1997 = 1995	
11	YPT Joutseno	Gulf of Finland	15,0	17,0	18,0	11,9	11,3	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
12	Kaukas Lappeenranta	Gulf of Finland	41,0	7,3	8,0	7,5	9,0	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
13	E-G Kaukopää (Imatra)	Gulf of Finland	52,0	12,0	11,0	19,0	26,0	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
14	Syasstroi	Lake Lagoda	90,0	33,0	23,4	4,7	36,0	was 9 months in a standstill in 1997, dam was broken in 1998	MEF91
15	Volkhov	Lake Lagoda	280,0	150,0	61,8	83,8	83,8	1998=1997	
16	Sunila Oy - Kotka	Gulf of Finland	14,0	20,0	17,0	7,8	7,5	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
17	Helsinki Region	Gulf of Finland	53,0	58,0	30,0	41,2	51,0		
18	St. Petersburg	Gulf of Finland						In Hot Spot 21	
19	St. Petersburg (Urban) (3)	Gulf of Finland						In Hot Spot 21	
20	St. Petersburg (Suburban)	Gulf of Finland						In Hot Spot 21	
21	St. Petersburg	Gulf of Finland	3433,0	2145,0	1870,0	1706,0	1639,0	Total of Hot Spots 18, 19, 20 and 21	EBRD 99
22	St. Petersburg	Gulf of Finland							
23	St. Petersburg	Gulf of Finland							
24	St. Petersburg Region	Gulf of Finland							
25	Narva	Gulf of Finland			43,0	34,0	24,0	**atmospheric pollution**	Min. of Env. 1999
26	Kohtla Järve	Gulf of Finland	125,2	36,4	21,0	16,0	9,6	*1991 = data 1992*	SEPA 96 (P-tot 1992 & 1994)
27	Kehra	Gulf of Finland	6,0	5,0	1,5	1,9	4,4		
28	Tallinn	Gulf of Finland	166,8	54,2	39,9	69,0	89,0		SEPA 96 (P-tot 1991 & 1994), Min of Env. 1999
29	Tallinn	Gulf of Finland						**deleted hot spot**	
30	Gulf of Finland	Gulf of Finland							
31	Haapsalu	Estonian Cost	1,7	3,2	2,6	2,8	0,6		SEPA 96 (P-tot 1991 & 1994)
32	Matsalu Bay	Estonian Cost	8,0	4,5	4,5	4,5	4,5	1995 = 1994, 1998=1997	
33	Pärnu	Gulf of Riga	8,4	7,2	6,0	5,2	5,0		SEPA 96 (P-tot 1991 & 1994)
34	Paide	Gulf of Riga	10,0	4,4	5,3	3,2	1,7		SEPA 96 (P-tot 1991 & 1994)
35	Vohma Meat Combine	Gulf of Riga	4,0	0,4	0,4	0,4	0,4	**deleted hot spot** 1998=1997=1995=1994	
36	Gulf of Riga	Gulf of Riga							
37	Gulf of Riga Mgt	Gulf of Riga	3500,0	3000,0	3000,0	3000,0	3000,0	1998 = 1997 = 1995 = 1994.	DEPA 94, no information in 1998
38	Sloka	Gulf of Riga	12,0	12,0	9,2	15,7	15,3	1997 = 1995, Production of pulp and paper is ceased, the plant is privatised	HELCOM Bureau of Latvia, 1998
39	Latbiofarm	Gulf of Riga	1,5	1,6	2,2	3,8	2,7		HELCOM Bureau of Latvia, 1998
40	Agriculture / Livestock	Gulf of Riga	750,0	400,0	400,0	400,0	420,0	1997 = 1995 = 1994	HELCOM Bureau of Latvia, 1998
41	Siauliai	Gulf of Riga	86,0	76,0	43,0	14,9	27,0	1991 = data 1992	
42	Riga (WWTP Phase II)	Daugava RB	217,0	193,6	183,0	284,6	189,0		HELCOM Bureau of Latvia, 1998 & SEPA 96 (P-tot 1991 & 1994)
43	VEF Plant (Riga)	Daugava RB							
44	RER Plant (Riga)	Daugava RB							
45	Riga	Daugava RB							
46	Daugavpils	Daugava RB	61,7	37,0	34,6	66,4	34,0		HELCOM Bureau of Latvia, 1998 & SEPA 96 (P-tot 1991 & 1994)
47	Vitebsk	Daugava RB	32,6	32,6	32,6	32,6	32,6	figures represent part of the hot spot, 1998=1997 = 1995 = 1994 = 1991	
48	Liepaja (3)	Latvian Coast	12,1	20,4	26,0	37,4	7,0		HELCOM Bureau of Latvia, 1998& SEPA 96 (P-tot 1991 & 1994)
49	Sovetsk	Nemunas RB	52,0	2,0	1,4	0,9	1,1		
50	Neman	Nemunas RB	14,0	0,2	0,5	0,2	0,0		
51	Kaunas	Nemunas RB	146,0	274,0	188,0	156,0	296,0		
52	Amalg Azotaz	Nemunas RB	0,9	0,2	0,2	0,4	0,2	1995 = 1994	
53	Kedainiai	Nemunas RB	85,0	7,9	8,5	13,0	8,0		quest. 95 & 96 + SEPA 96 (P-tot 1991 & 1994)

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spot" in 1999.

Key	Site name	Receiving water body	P- Tot (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
54	Kedainiai	Nemunas RB	47,0	25,0	41,0	32,4	34,0		
55	Panevezys	Nemunas RB	133,0	91,1	83,0	55,7	53,0		quest. 95 & 96 + SEPA 96 (P-tot 1991 & 1994)
56	Panevezys	Nemunas RB							
57	Marijampole	Nemunas RB	15,0	15,0	14,6	15,0	13,0	1991 = 1994	
58	Alytus	Nemunas RB	50,5	45,2	19,0	38,0	20,0		SEPA 96 (P-tot 1991 & 1994)
59	Vilnius / Grigiskes	Nemunas RB	207,0	259,6	207,0	143,0	163,0		SEPA 96 (P-tot 1994)
60	Agriculture / Livestock	Nemunas RB							
61	Grodno	Nemunas RB							
62	Mazeikiai	Lithuanian Coast	57,0	57,0	16,0	6,7	2,0	1994 = 1991	
63	Klaipeda	Lithuanian Coast	130,6	87,1	94,0	92,8	93,0		SEPA 96 (P-tot 1991 & 1994)
64	Cardboard Factory	Lithuanian Coast	4,3	0,0	0,0	0,0	0,0	Company closed since 1994, 1997 = 1995	
65	Palanga	Lithuanian Coast	14,5	14,0	17,0	14,0	13,0		
66	Kursiu Lagoon	Lith/Kal Coast	4000,0	3000,0	3000,0	3000,0	3000,0	1995 = 1994 = 1997 = 1998	DEPA 94, no information in 1998
67	Kaliningrad	Kaliningrad	0,6	139,9	264,0	131,9	210,9		SEPA 96 (P-tot 1991 & 1994)
68	Pulp & Paper No 1, Kaliningrad	Kaliningrad	0,002	0,8	6,9	0,3	0,3	**deleted hot spot, 1998=1997**	
69	Pulp & Paper No 2 (4),Kaliningrad	Kaliningrad	0,01	10,0	50,0	10,4	9,8		
70	Kaliningrad	Kaliningrad							
71	Oil Bunkering Station	Kaliningrad	0,4	0,5	0,5	0,5	0,5	1995 = 1997=1998	
72	Agriculture / Livestock	Kaliningrad							
73	Vistula Lagoon	Kal/Pol Coast	800,0	13,0	356,0	292,0	281,4		Min. of Env. in Poland
74	XXXII. Koszalin - Jamno	Baltic Coast of Poland	15,0	15,0	15,0	15,0	10,8	1991 = 1994	
75	Gdynia - Debogorze	Baltic Coast of Poland	162,0	162,0	79,2	65,7	49,4	1991 = 1994	
76	Gdansk - Wschod, Oil Refinery	Baltic Coast of Poland	470,0	68,0	87,0	83,0	105,0		
77	Swiecie	Vistula					32,0		
78	Bydgoszcz - Fordon	Vistula					243,9		
79	Bydgoszcz - Kapusciska	Vistula	101,7	101,7	101,7	101,7	99,5	1991 = 1994 = 1995 = 1997	
80	Torun	Vistula					15,0		
81	Wloclawek - Anwil	Vistula	48,6	52,4	52,4	52,4	0,0	1994 = 1995 = 1997	SEPA 96, Min. of Environment 1999
82	Warsaw - Czajka	Vistula	210,0	210,0	232,0	227,9	69,36	1991 = 1994	
83	Warsaw - Poludnie, Siekierki	Vistula	241,0	330,0	327,0	426,0	393,6		SEPA 96 (P-tot 1991 & 1995)
84	Warsaw - Pancerz	Vistula	1825,0	1800,0	1825,0	1559,0	1559,0		SEPA 96 (P-tot 1991 & 1995)
85	Lublin - Hajdow	Vistula	105,0	218,0	161,0	234,6	244,2		SEPA 96 (P-tot 1991 & 1994)
86	Krakow - Plaszow	Vistula	455,0	465,0	176,0	240,0	266,0		SEPA 96 (P-tot 1991 & 1994)
87	Krakow - Kujawy, T. Sendzimir Steel Plant	Vistula	340,0	310,0	136,0	153,0	155,0		SEPA 96 (P-tot 1991 & 1994)
88	Katowice -East (6)	Vistula							
89	Jaworzno Organica Azot	Vistula					0,1		
90	Zgierz - Boruta Dyestuffs	Vistula							
91	Oswiecim - Dwory	Vistula	2,1	2,1	2,4	7,1	12,4	1991 = 1994	
92	Bukowno - Boleslaw	Vistula							
93	Brest	Vistula	185,0	185,0	185,0	185,0	185,0	1991 = data 1993, 1998=1997 = 1995 = 1994 = 1991	quest. 1994
94	Lvov	Vistula	1400,0	1400,0	1400,0	1400,0	1400,0	1998=1997 = 1995 = 1994 = 1991	
95	Agriculture / Livestock	Vistula							
96	Upper Basin (7)	Vistula							
97	Szczecin - Pomorzany	Oder/Odra	1000,0	960,0	250,0	250,0	85,8	1997 = 1995	SEPA 96 (P-tot 1991 & 1994)
98	Szczecin - Police, Skolwin	Oder/Odra	52,0	15,0	10,0	79,0	20,0		
99	Poznan	Oder/Odra	337,0	348,0	349,0	348	333	1991 & 1994 SEPA	quest. 95 & 96 + SEPA 96 (P-tot 1991 & 1994)
100	Lodz	Oder/Odra	428,0	386,0	243,0	563,0	451,1	1991 & 1994 SEPA	quest.96 + SEPA 96 (P-tot 1991 & 1994)
101	Zielona Gora	Oder/Odra	109,0	109,0	38,3	42,0	35,9	1991 = 1994	quest.96 + SEPA 96 (P-tot 1994)
102	Legnica-Glogow	Oder/Odra	293,0	80,0	80,0	80,0	80,0	1998=1997 = 1995 = 1994	DEPA 1994
103	Wroclaw	Oder/Odra	60,0	60,0	60,0	60,0	356,0	1991 = 1994 = 1995 = 1997	
104	Wroclaw	Oder/Odra							
105	Ubocz - Luban	Oder/Odra	0,0	0,0	0,0	0,0	0,1		
106	Boleslawiec - Wizow	Oder/Odra	410,0	29,0	8,0	3,7	3,8		
107	Katowice-West	Oder/Odra	1204,0	1280,0	1280,0	35,0	23,0	1995 = 1994	DEPA 1994
108	Katowice-West	Oder/Odra							DEPA 1994
109	Ostrava	Oder/Odra	484,0	266,0	266,0	266,0	266,0	1998=1997 = 1995 = 1994	DEPA 1994
110	Ostrava Area	Oder/Odra							DEPA 1994
111	Upper Basin (7)	Oder/Odra							
112	Agriculture / Livestock	Oder/Odra							
113	Odra Lagoon mgt	Oder/Odra	63,0	70,0	41,0	37,0	29,0		quest. 95 & 96 + SEPA 96 (P-tot 1994)

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spot" in 1999.

Key	Site name	Receiving water body	P- Tot (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
114	Greifswald	Arkona Basin	*44,0*	3,0	3,0	3,0	3,0	**deleted hot spot** & 1991 = data 1987, 1998=1997 = 1995 = 1994	German proposal to remove Hot Spots no.114 & 116
115	Neubrandenburg	Arkona Basin	13,0	13,0	13,0	1,6	1,0		
116	Stralsund	Arkona Basin	102,0	6,5	6,5	6,5	6,5	**deleted hot spot**, 1998=1997 = 1995 = 1994	German proposal to remove Hot Spots no.114 & 116, 1995
117	Stavenhagen - Malchin	Arkona Basin	20,0	1,6	1,6	1,5	0,5		
118	Agriculture	Arkona Basin	180,0	180,0	180,0		180,0	1991 = 1994 = 1995=1998	
119	Lübeck	Belt Sea							
	119.1	Belt Sea	13,6	0,9	0,9	0,9	12,0	1997 = 1995 = 1994	SEPA 96 (P-tot 1991)
	119.2	Belt Sea	31,0	1,3	1,3	1,3	1,3	1998=1997 = 1995 = 1994	SEPA 96 (P-tot 1991)
	119.3	Belt Sea	10,6	10,6	10,3	7,7	7,7	1991 = 1994, 1998=1997 = 1995	SEPA 96 (P-tot 1991)
120	Wismar	Belt Sea	190,0	60,0	60,0	4,5	4,2		quest.95 + SEPA 96 (P-tot 1991)
121	Rostock	Belt Sea	250,0	26,0	26,0	26,0	26,0	**deleted hot spot**, 1998=1997 = 1995 = 1994	
122	Agriculture (8)	Belt Sea							
123	Copenhagen	The Sound	590,0	593,0	438,0	141,0	81,8	1994 SEPA	
124	Agriculture (8)	The Sound							
125	The Swedish Sound Area	The Sound	53,0	53,0	53,0	53,0	53,0	1991=data 1992, 1998=1997=1995=1994=1991	
126	Skoghall	Kattegat	15,0	*10,0*	12,0	9,6	19,0	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 &99
127	Göteborg Archipelago	Kattegat	102,0	102,0	103,0	103,0	103,0	1991 = 1994, 1998=1997 = 1995	
128	Laholm Area	Kattegat	32,0	32,0	32,0	32,0	32,0	1991=data 1992, 1998=1997=1995=1994=1991	
129	Agriculture (8)	Kattegat							
130	Stockholm	Swedish Coast	66,5	66,5	45,0	45,0	45,0	1991 = 1994, 1998=1997 = 1995	quest.95 & 96 + SEPA 96 (P-tot 1994)
131	Nymölla	Bornholm Basin	52,0	54,0	17,0	30,0	15,0	**deleted hot spot**	SNV 92 & 96 & 98 &99
132	Kristianstad Area	Bornholm Basin	27,0	27,0	27,0	27,0	27,0	*1991 = data 1992* , 1998=1997 = 1995 = 1994 = 1991	
SUM			**27104**	**21044**	**19190**	**17346**	**17628**		
SUM Without Coastal Lagoons			**18733**	**14957**	**12788**	**11012**	**11313**		

ABBREVIATIONS USED FOR SOURCES

SNV 92 Statens naturvårdsverket (Swedish EPA), Rapport 4086 : Skogsindustrins emissioner till vatten och luft 1991 (Forest industry emissions to water and air 1991), July 1992

SNV 96 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins emissioner till vatten och luft 1995 (Forest industry emissions to water and air 1995).

SNV 98 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins utsläpp till vatten och luft 1996 (Forest industry emissions to water and air 1996), April 1998.

SNV 99 Naturvårdsverket: Skogsindustrins utsläpp till vatten och luft samt avfallsmängder och energiförbrukning 1998 (Forest industry emissions to water and air 1998), August 1999.

FFIF 92 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1992 (Ympäristösuojelun Vuosikirja, 1992).

FFIF 96 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1996 (Ympäristönsuojelun vuosikirja, 1996)

FFIF 98 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1998 (Ympäristönsuojelun vuosikirja, 1998)

FFIF 99 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1999 (Ympäristönsuojelun vuosikirja, 1999)

MEF 91 Ministry of the Environment of Finland, Environmental priority action programme for Leningrad, Leningrad region Karelia and Estonia, Pre-feasibility study No 7 : Reduction of the environmental effects of Syasstroy pulp and paper mill and Volkhov aluminium factory, 1991.

DEPA 94 Danish Environmental Protection Agency and KCCV, Hot Spot Review - Vol 1, Executive Summary.Baltic Sea Environment Programme, Nov. 1994

SEPA 96 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1996.

SEPA 99 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1999.

Helcom 92 Conference Document No. 5/3 : The Baltic Sea Joint Comprehensive Environmental Action Programme, Diplomatic Conference on the Protection of the Marine Environment of the Baltic Sea Area, April 1992.

quest. 95 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1995.

quest. 96 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1996.

quest. 98 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1998.

quest. 99 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1999.

EBRD 99 Information on revision of JCP hot spots related to municipal services of St. Petersburg. Proposal for deletion of the JCP hot spot No 21. ("Removal of Phosphorous from waste water" St. Petersburg, municipal")

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spot" in 1999.

Key	Site name	Receiving water body	N-tot (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
1	Rönnskärsverken	Bothnian Bay							
2	Metsä - Botnia Oy Kemi	Bothnian Bay	105	110	162	199	189	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
3	Husum Kraft Mill (1)	Bothnian Bay	83	120	117	118	104	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
4	Östrand (1)	Bothnian Bay	110	100	147	183	136	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
5	Vallvik (1)	Bothnian Bay	33	60	42	36	31	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
6	Falun Garpenberg	Bothnian Bay	129	129	129	129	152		
7	Outokumpu Group Harjavalta	Bothnian Bay	30	30	30	4	9		
8	Kemira Oy Vuorikemia	Bothnian Bay	27	27	26	26	26	**deleted hot spot** 1991 = 1994, 1998=1997	quest. 96, call to Kai Forsius 1998
9	Fish Farming, Åland Seas	Archipelago & Åland Seas	890	750	670	525	526		
10	Agriculture (2)	Archipelago Sea	4130	3720	3720	3720	3720	1998=1997 = 1995 = 1994	
11	YPT Joutseno	Gulf of Finland	99	97	109	75	97	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
12	Kaukas Lappeenranta	Gulf of Finland	460	110	129	190	228	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
13	E-G Kaukopää (Imatra)	Gulf of Finland	276	180	232	213	338	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
14	Syasstroi	Lake Lagoda	270	170	192	60	182	was 9 months in a standstill in 1997, dam was broken 1998	MEF91
15	Volkhov	Lake Lagoda	70	100	26	8	8	1998=1997	
16	Sunila Oy - Kotka	Gulf of Finland	88	99	116	64	55	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
17	Helsinki Region	Gulf of Finland	2760	2560	2461	2825	1460		quest. 95 & 96 + SEPA 96 (N-tot 1991 & 1994), Finnish Env. Institute 1999
18	St. Petersburg	Gulf of Finland							
19	St. Petersburg (Urban) (3)	Gulf of Finland							
20	St. Petersburg (Suburban)	Gulf of Finland							
21	St. Petersburg	Gulf of Finland							
22	St. Petersburg	Gulf of Finland							
23	St. Petersburg	Gulf of Finland							
24	St. Petersburg Region	Gulf of Finland							
25	Narva	Gulf of Finland			356	308	229		Min of Env. 1999
26	Kohtla Järve	Gulf of Finland	434	474	403	417	335	*1991 = data 1992*	
27	Kehra	Gulf of Finland	50	20	6	38	28		
28	Tallinn	Gulf of Finland	2219	1058	1183	954	923		quest. 96 + SEPA 96 (N-tot 1991 & 1994), Min of Env. 1999
29	Tallinn	Gulf of Finland						**deleted hot spot**	
30	Gulf of Finland	Gulf of Finland							
31	Haapsalu	Estonian Cost	12	23	18	18	9		SEPA 96 (N-tot 1991)
32	Matsalu Bay	Estonian Cost	70	31	30	30	30	1998=1997	
33	Pärnu	Gulf of Riga	44	47	30	23	21		
34	Paide	Gulf of Riga	20	14	17	17	15		quest. 96 + SEPA 96 (N-tot 1991 & 1994)
35	Vohma Meat Combine	Gulf of Riga	15	4	4	4	4	**deleted hot spot** 1998=1997=1995=1994	
36	Gulf of Riga	Gulf of Riga							
37	Gulf of Riga Mgt	Gulf of Riga	150000	90000	90000	90000	90000	1998 = 1997 = 1995 = 1994.	DEPA 94, no information in 1998
38	Sloka	Gulf of Riga	120	57	57	78	70	1995 = 1994, Production of pulp and paper is ceased, the plant is privatised	HELCOM Bureau of Latvia, 1998
39	Latbiofarm	Gulf of Riga	220	82	90	93	28		HELCOM Bureau of Latvia, 1998
40	Agriculture / Livestock	Gulf of Riga	21000	11000	11000	11000	12500	1997 = 1995 = 1994	HELCOM Bureau of Latvia, 1998
41	Siauliai	Gulf of Riga	1200	680	510	304	291	1991 = data 1992, 1997 = 1995	
42	Riga (WWTP Phase II)	Daugava RB	3944	1124	1112	1523	1038		HELCOM Bureau of Latvia, 1998 & SEPA 96 (N-tot 1991 & 1994)
43	VEF Plant (Riga)	Daugava RB							
44	RER Plant (Riga)	Daugava RB							
45	Riga	Daugava RB							
46	Daugavpils	Daugava RB	240	200	180	356	207		HELCOM Bureau of Latvia, 1998
47	Vitebsk	Daugava RB							
48	Liepaja (3)	Latvian Coast	396	204	261	238	161		HELCOM Bureau of Latvia, 1998 & SEPA 96 (N-tot 1991 & 1994)
49	Sovetsk	Nemunas RB	3300	200	2	149	169		
50	Neman	Nemunas RB	2700	54	90	48	1		
51	Kaunas	Nemunas RB	1321	1480	1101	1085	1606		SEPA 96 (N-tot 1991 & 1994)
52	Amalg Azotaz	Nemunas RB	50	12	14	16	29		
53	Kedainiai	Nemunas RB	799	35	43	72	64		
54	Kedainiai	Nemunas RB	38	11	13	12	21		
55	Panevezys	Nemunas RB	511	511	461	342	353		
56	Panevezys	Nemunas RB							
57	Marijampole	Nemunas RB	121	121	60	84	107	1991 = 1994	
58	Alytus	Nemunas RB	257	218	159	164	154		SEPA 96 (N-tot 1991 & 1994)
59	Vilnius / Grigiskes	Nemunas RB	2293	2200	2146	2146	463	1997 = 1995	SEPA 96 (N-tot 1995)
60	Agriculture / Livestock	Nemunas RB							
61	Grodno	Nemunas RB							
62	Mazeikiai	Lithuanian Coast	550	340	293	179	53		

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots " in 1999.

Key	Site name	Receiving water body	N-tot (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
63	Klaipeda	Lithuanian Coast	100	837	829	684	783		
64	Cardboard Factory	Lithuanian Coast	240	0	0	0	0	Company closed since 1994	
65	Palanga	Lithuanian Coast	82	103	91	102	96		SEPA 96 (N-tot 1991 & 1994)
66	Kursiu Lagoon	Lith/Kal Coast	25000	30000	30000	30000	30000	1995 = 1994 = 1997 = 1998.	DEPA 94, no information in 1998
67	Kaliningrad	Kaliningrad	3	491	1305	1700	1394		SEPA 96 (N-tot 1991 & 1994)
68	Pulp & Paper No 1, Kaliningrad	Kaliningrad	0,2	30	1,0	5,3	5,3	**deleted hot spot,** 1998=1997	
69	Pulp & Paper No 2 (4),Kaliningrad	Kaliningrad	0,4	65	1,3	122,3	75,8		
70	Kaliningrad	Kaliningrad							
71	Oil Bunkering Station	Kaliningrad	0,20	0,04	0,04	0,04	0,04	1995 = 1997=1998	
72	Agriculture / Livestock	Kaliningrad							
73	Vistula Lagoon	Kal/Pol Coast	3891	3891	3823	4270	4004		Min of Env in Poland
74	XXXII. Koszalin - Jamno	Baltic Coast of Poland	438	438	343	950	500	1991 = 1994	SEPA 96 (N-tot 1994)
75	Gdynia - Debogorze	Baltic Coast of Poland	1209	1209	1234	1234	452	1991 = 1994, 1997 = 1995	SEPA 96 (N-tot 1994)
76	Gdansk - Wschod, Oil Refinery	Baltic Coast of Poland	1739	2030	1127	1781	1540		SEPA 96 (N-tot 1991 & 1994)
77	Swiecie	Vistula					95		
78	Bydgoszcz - Fordon	Vistula					1358		
79	Bydgoszcz - Kapusciska	Vistula	922	922	922	922	900	1991 = 1994 = 1995 = 1997	
80	Torun	Vistula					113		
81	Wloclawek - Anwil	Vistula	290	530	123	123	105	1997 = 1995	SEPA 96 (N-tot 1991 & 1995), Min of Env. 1999
82	Warsaw - Czajka	Vistula	1200	1600	1705	2073	1931		
83	Warsaw - Poludnie, Siekierki	Vistula	1495	1600	1635	2300	2325		SEPA 96 (N-tot 1991 & 1995)
84	Warsaw - Pancerz	Vistula	5475	5475	5460	18396	18396		SEPA 96 (N-tot 1991 & 1994)
85	Lublin - Hajdow	Vistula	447	1194	1204	970	1163		SEPA 96 (N-tot 1991 & 1994)
86	Krakow - Plaszow	Vistula	1860	1520	1753	1699	1687		SEPA 96 (N-tot 1991 & 1994)
87	Krakow - Kujawy, T. Sendzimir Steel Plant	Vistula	900	820	1112	958	990		SEPA 96 (N-tot 1991 & 1994)
88	Katowice -East (6)	Vistula							
89	Jaworzno Organica Azot	Vistula							
90	Zgierz - Boruta Dyestuffs	Vistula							
91	Oswiecim - Dwory	Vistula	81	95	161	139	93		
92	Bukowno - Boleslaw	Vistula							
93	Brest	Vistula	862	230	230	230	230	data 1993, calculated from quest. 1994 , 1998=1997 = 1995	quest. 94
94	Lvov	Vistula	28355	28355	7000	7000	7000	1991 = 1994, 1998=1997	
95	Agriculture / Livestock	Vistula							
96	Upper Basin (7)	Vistula							
97	Szczecin - Pomorzany	Oder/Odra	4600	4500	1500	1500	717		SEPA 96 (N-tot 1991 & 1994)
98	Szczecin - Police, Skolwin	Oder/Odra	30	70	45	145	78		
99	Poznan	Oder/Odra	2775	2615	2521	2511	2657		quest. 95 & 96 + SEPA 96 (N-tot
100	Lodz	Oder/Odra	2644	2644	2618	2211	3338	1991 = 1994	quest. 96 + SEPA 96 (N-tot 1994)
101	Zielona Gora	Oder/Odra	906	906	462	306	285	1991 = 1994	quest. 96 + SEPA 96 (N-tot 1994)
102	Legnica-Glogow	Oder/Odra	242	115	115	115	115	1198=1997 = 1995 = 1994	DEPA 1994
103	Wroclaw	Oder/Odra	11	8	8	32	2340	1995 = 1994	
104	Wroclaw	Oder/Odra							
105	Ubocz - Luban	Oder/Odra					0		
106	Boleslawiec - Wizow	Oder/Odra							
107	Katowice-West	Oder/Odra	4520	5400	5400	241	60	1995 = 1994	DEPA 1994
108	Katowice-West	Oder/Odra	2796	1810	1810	1810	1810	1998=1997 = 1995 = 1994	DEPA 1994
109	Ostrava	Oder/Odra	1814	1021	1021	1021	1021	1998=1997 = 1995 = 1994	DEPA 1994
110	Ostrava Area	Oder/Odra	1712	1374	1374	1374	1374	1998=1997 = 1995 = 1994	DEPA 1994
111	Upper Basin (7)	Oder/Odra							
112	Agriculture / Livestock	Oder/Odra							
113	Odra Lagoon mgt	Oder/Odra	250	250	172	155	110		
114	Greifswald	Arkona Basin	365	80	80	80	80	**deleted hot spot**, 1998=1997 = 1995 = 1994	German proposal to remove Hot Spot no.114 & 116
115	Neubrandenburg	Arkona Basin	400	370	370	160	144	1995 = 1994	
116	Stralsund	Arkona Basin	485	120	120	120	120	**deleted hot spot**,1998= 1997 = 1995 = 1994	German proposal to remove Hot Spot no.114 & 116
117	Stavenhagen - Malchin	Arkona Basin	60	50	50	30	43		
118	Agriculture	Arkona Basin	8700	8700	8700	8700	8700	1998=1997 = 1995 = 1994 = 1991	quest. 96, no changes between 1994 and 1995
119	Lübeck	Belt Sea							
	119.1	Belt Sea	76	28	28	28	932	1997 = 1995 = 1994	SEPA 96 (N-tot 1991)
	119.2	Belt Sea	49	11	11	11	11	1998=1997 = 1995 = 1994	SEPA 96 (N-tot 1991)
	119.3	Belt Sea	865	865	776	934	934	1991 = 1994, 1998=1997	
120	Wismar	Belt Sea	130	165	165	265	228		quest. 96, no changes between 1994 and 1995, SEPA 96 (N-tot 1991)
121	Rostock	Belt Sea	850	1000	1039	1039	1039	**deleted hot spot**, 1998=1997 = 1995	SEPA 96 (N-tot 1995)

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots " in 1999.

Key	Site name	Receiving water body	N-tot (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
122	Agriculture (8)	Belt Sea							
123	Copenhagen	The Sound	2900	2912	2664	406	82		SEPA 96 (N-tot 1994)
124	Agriculture (8)	The Sound							
125	The Swedish Sound Area	The Sound	5900	5900	5900	5900	5900	1991=data 1992, 1998=1997=1995=1994=1991	
126	Skoghall	Kattegat	200	*220*	146	114	117	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & -99
127	Göteborg Archipelago	Kattegat	2400	2400	2510	2510	2510	1991 = 1994, 1997 = 1995	
128	Laholm Area	Kattegat	*1400*	1400	1400	1400	1400	1991=data 1992, 1998=1997=1995=1994=1991	
129	Agriculture (8)	Kattegat							
130	Stockholm	Swedish Coast	4773	4773	4070	4070	4070	1991 = 1994, 1998=1997 = 1995	
131	Nymölla	Bornholm Basin	490	305	226	266	155	**deleted hot spot**	SNV 92 & 96 & 98 & -99
132	Kristianstad Area	Bornholm Basin	1580	1580	1580	1580	1580	1991 = data 1992, 1998=1997 = 1995 = 1994 = 1991	
SUM			**329996**	**251591**	**224885**	**232764**	**233355**		
SUM Without Coastal Lagoons			**150785**	**127419**	**100860**	**108309**	**109211**		

ABBREVIATIONS USED FOR SOURCES

SNV 92 Statens naturvårdsverket (Swedish EPA), Rapport 4086 : Skogsindustrins emissioner till vatten och luft 1991 (Forest industry emissions to water and air 1991), July 1992

SNV 96 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins emissioner till vatten och luft 1995 (Forest industry emissions to water and air 1995).

SNV 98 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins utsläpp till vatten och luft 1996 (Forest industry emissions to water and air 1996), April 1998.

SNV 99 Naturvårdsverket: Skogsindustrins utsläpp till vatten och luft samt avfallsmängder och energiförbrukning 1998 (Forest industry emissions to water and air 1998), August 1999.

FFIF 92 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1992 (Ympäristösuojelun Vuosikirja, 1992).

FFIF 96 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1996 (Ympäristönsuojelun vuosikirja, 1996)

FFIF 98 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1998 (Ympäristönsuojelun vuosikirja, 1998)

FFIF 99 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1999 (Ympäristönsuojelun vuosikirja, 1999)

MEF 91 Ministry of the Environment of Finland, Environmental priority action programme for Leningrad, Leningrad region Karelia and Estonia, Pre-feasibility study No 7 : Reduction of the environmental effects of Syasstroy pulp and paper mill and Volkhov aluminium factory, 1991.

DEPA 94 Danish Environmental Protection Agency and KCCV, Hot Spot Review - Vol 1, Executive Summary.Baltic Sea Environment Programme, Nov. 1994

SEPA 96 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1996.

SEPA 99 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1999.

Helcom 92 Conference Document No. 5/3 : The Baltic Sea Joint Comprehensive Environmental Action Programme, Diplomatic Conference on the Protection of the Marine Environment of the Baltic Sea Area, April 1992.

quest. 95 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1995.

quest. 96 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1996.

quest. 98 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1998.

quest. 99 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1999.

EBRD 99 Information on revision of JCP hot spots related to municipal services of St. Petersburg. Proposal for deletion of the JCP hot spot No 21. ("Removal of Phosphorous from waste water" St. Petersburg, municipal")

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots " in 1999.

Key	Site name	Receiving water body	COD (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
1	Rönnskärsverken	Bothnian Bay	470	470	335	558	558	1991 = 1994, 1998=1997	
2	Metsä - Botnia Oy Kemi	Bothnian Bay	28000	14700	15156	16024	14626	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
3	Husum Kraft Mill (1)	Bothnian Bay	32000	26000	28800	27200	22900	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
4	Östrand (1)	Bothnian Bay	21700	22000	20161	19434	16023	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
5	Vallvik (1)	Bothnian Bay	9900	9700	9152	9258	7180	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
6	Falun / Garpenberg	Bothnian Bay							
7	Outokumpu Group Harjavalta	Bothnian Bay							
8	Kemira Oy Vuorikemia	Bothnian Bay						**deleted hot spot**	
9	Fish Farming, Åland Seas	Archipelago & Åland Seas							
10	Agriculture (2)	Archipelago Sea							
11	YPT Joutseno	Gulf of Finland	19700	16100	16301	12595	12281	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
12	Kaukas Lappeenranta	Gulf of Finland	36200	12900	14746	20696	20137	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
13	E-G Kaukopää (Imatra)	Gulf of Finland	56700	18200	22182	22985	26754	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
14	Syasstroi	Lake Lagoda	37742	37742	37742	8346	7684	1991 = 1994 = 1995, was 9 months in the standstill in 1997, dam was broken in 1998	
15	Volkhov	Lake Lagoda	107	107	107	88	88	1991 = 1994 = 1995, 1998=1997	
16	Sunila Oy - Kotka	Gulf of Finland	22800	18300	11530	6649	6647	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
17	Helsinki Region	Gulf of Finland	4700	4700	4400	4427	4961	1991 = 1994	Finnish Env. Institute 1999
18	St. Petersburg	Gulf of Finland							
19	St. Petersburg (Urban) (3)	Gulf of Finland							
20	St. Petersburg (Suburban)	Gulf of Finland							
21	St. Petersburg	Gulf of Finland							
22	St. Petersburg	Gulf of Finland							
23	St. Petersburg	Gulf of Finland							
24	St. Petersburg Region	Gulf of Finland							
25	Narva	Gulf of Finland							
26	Kohtla Järve	Gulf of Finland							
27	Kehra	Gulf of Finland	475	475	475	340	1092	1991 = 1994 = 1995	
28	Tallinn	Gulf of Finland					15213		
29	Tallinn	Gulf of Finland						**deleted hot spot**	
30	Gulf of Finland	Gulf of Finland							
31	Haapsalu	Estonian Cost							
32	Matsalu Bay	Estonian Cost							
33	Pärnu	Gulf of Riga							
34	Paide	Gulf of Riga					17		
35	Vohma Meat Combine	Gulf of Riga						**deleted hot spot**	
36	Gulf of Riga	Gulf of Riga							
37	Gulf of Riga Mgt	Gulf of Riga							
38	Sloka	Gulf of Riga	6600	300	670	181	103	Production of pulp and paper is ceased, the plant is privatised	HELCOM Bureau of Latvia, 1998
39	Latbiofarm	Gulf of Riga	1800	420	278	189	155		HELCOM Bureau of Latvia, 1998
40	Agriculture / Livestock	Gulf of Riga							
41	Siauliai	Gulf of Riga	1967	1967	1967	683	675	1991 = 1994 = 1995	HELCOM Bureau of Latvia, 1998
42	Riga (WWTP Phase II)	Daugava RB	39800	13800	15795	10839	3680		HELCOM Bureau of Latvia, 1998
43	VEF Plant (Riga)	Daugava RB	3	3	3	3	3	1998=1997 = 1995 = 1994 = 1991	
44	RER Plant (Riga)	Daugava RB	15	13	11	12	8		HELCOM Bureau of Latvia, 1998
45	Riga	Daugava RB							
46	Daugavpils	Daugava RB	2100	2100	2054	3747	2542		HELCOM Bureau of Latvia, 1998
47	Vitebsk	Daugava RB							
48	Liepaja (3)	Latvian Coast	5700	4600	1605	547	753		HELCOM Bureau of Latvia, 1998
49	Sovetsk	Nemunas RB							
50	Neman	Nemunas RB							
51	Kaunas	Nemunas RB							
52	Amalg Azotaz	Nemunas RB							
53	Kedainiai	Nemunas RB							
54	Kedainiai	Nemunas RB							
55	Panevezys	Nemunas RB							
56	Panevezys	Nemunas RB							
57	Marijampole	Nemunas RB							
58	Alytus	Nemunas RB					722		
59	Vilnius / Grigiskes	Nemunas RB	23969	15968	15870	2887	33022		
60	Agriculture / Livestock	Nemunas RB							
61	Grodno	Nemunas RB							

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots" in 1999.

Key	Site name	Receiving water body	COD (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
62	Mazeikiai	Lithuanian Coast	70	70	486	374	374	1991 = 1994, 1998=1997	
63	Klaipeda	Lithuanian Coast	5843	5843	7299	6551	6651	1991 = 1994, 1998=1997	
64	Cardboard Factory	Lithuanian Coast	2500	0	0	0	0	Company closed since 1994, 1997 = 1995	
65	Palanga	Lithuanian Coast	878	878	563	1153	1153	1991 = 1994, 1998=1997	
66	Kursiu Lagoon	Lith/Kal Coast							
67	Kaliningrad	Kaliningrad							
68	Pulp & Paper No 1, Kaliningrad	Kaliningrad						**deleted hot spot**	
69	Pulp & Paper No 2 (4),Kaliningrad	Kaliningrad							
70	Kaliningrad	Kaliningrad							
71	Oil Bunkering Station	Kaliningrad							
72	Agriculture / Livestock	Kaliningrad							
73	Vistula Lagoon	Kal/Pol Coast	16440	39270	45541	39485	37742		Min of Env in Poland
74	XXXII. Koszalin - Jamno	Baltic Coast of Poland	12800	580	786	886	823		
75	Gdynia - Debogorze	Baltic Coast of Poland	12400	3300	2014	1449	1045		
76	Gdansk - Wschod, Oil Refinery	Baltic Coast of Poland	12100	7300	7931	8971	7782		
77	Swiecie	Vistula	23500	12600	15942	10509	7424		
78	Bydgoszcz - Fordon	Vistula	11600	10800	10800	8506	6195	1995 = 1994	
79	Bydgoszcz - Kapusciska	Vistula	10541	10541	10541	10541	10280	1991 = 1994 = 1995 = 1997	
80	Torun	Vistula	9900	9200	6751	10435	484		
81	Wloclawek - Anwil	Vistula	3100	280	227	227	259	1997 = 1995	
82	Warsaw - Czajka	Vistula	6000	7700	5917	8299	6942		
83	Warsaw - Poludnie, Siekierki	Vistula	30660	30660	30660	30660	35840	1991 = 1994 = 1995 = 1997	
84	Warsaw - Pancerz	Vistula	69400	69400	69160	67627	67627		
85	Lublin - Hajdow	Vistula	8700	1900	1480	1661	1624		
86	Krakow - Plaszow	Vistula	16500	20000	18808	21833	24920		
87	Krakow - Kujawy, T. Sendzimir Steel Plant	Vistula	10700	9900	5858	7350	10535		
88	Katowice -East (6)	Vistula							
89	Jaworzno Organica Azot	Vistula	85	19	33	22	17		
90	Zgierz - Boruta Dyestuffs	Vistula	1700	1400	1310	590	590	1998=1997	
91	Oswiecim - Dwory	Vistula	3500	740	509	438	752		
92	Bukowno - Boleslaw	Vistula	1700	660	707	598	598	1998=1997	
93	Brest	Vistula							
94	Lvov	Vistula							
95	Agriculture / Livestock	Vistula							
96	Upper Basin (7)	Vistula							
97	Szczecin - Pomorzany	Oder/Odra	37500	36500	10000	10000	4438	1997 = 1995	
98	Szczecin - Police, Skolwin	Oder/Odra	2000	1500	1526	4881	1580		
99	Poznan	Oder/Odra	24800	20300	23169	22734	22693		
100	Lodz	Oder/Odra	45000	39500	37800	38532	29946		
101	Zielona Gora	Oder/Odra	5000	4500	2484	1846	1828		
102	Legnica-Glogow	Oder/Odra					51		
103	Wroclaw	Oder/Odra	10200	9200	941	577	14200		
104	Wroclaw	Oder/Odra	14500	12900	4414	3724	3724		
105	Ubocz - Luban	Oder/Odra	3,0	0,1	0,4	0,4	0,0	1995 = 1997	
106	Boleslawiec - Wizow	Oder/Odra							
107	Katowice-West	Oder/Odra					241		
108	Katowice-West	Oder/Odra							
109	Ostrava	Oder/Odra							
110	Ostrava Area	Oder/Odra							
111	Upper Basin (7)	Oder/Odra							
112	Agriculture / Livestock	Oder/Odra							
113	Odra Lagoon mgt	Oder/Odra	2100	2100	1388	1250	1080		
114	Greifswald	Arkona Basin	*2400*	160	160	160	160	**deleted hot spot,** 1991 = data 1987, 1998=1997 = 1995 = 1994	proposal to remove Hot Spot no.114 & 116, 1995
115	Neubrandenburg	Arkona Basin	1500	590	590	174	276	1998=1997	
116	Stralsund	Arkona Basin	*3400*	321	321	321	321	**deleted hot spot,** 1991 = data 1987, 1998=1997 = 1995 = 1994	proposal to remove Hot Spot no.114 & 116, 1995
117	Stavenhagen - Malchin	Arkona Basin	270	100	100	355	120		
118	Agriculture	Arkona Basin	15400	15400	15400	15400	15400	1998=1997 = 1995 = 1994 = 1991	quest.1996, no changes between 1994 and 1995
119	Lübeck	Belt Sea							
	119.1	Belt Sea	42	42	42	42	1659	1997 = 1995 = 1994 = 1991	
	119.2	Belt Sea	75	75	75	75	75	1998=1997 = 1995 = 1994 = 1991	
	119.3	Belt Sea	1396	1396	1231	1227	1228	1991 = 1994, 1998=1997	
120	Wismar	Belt Sea	1100	1100	1100	520	406	1995 = 1994 = 1991, 1998=1997	

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots" in 1999.

Key	Site name	Receiving water body	COD (tonnes / year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
121	Rostock	Belt Sea	10500	5500	5500	5500	5500	**deleted hot spot,** 1998=1997 = 1995 = 1994	
122	Agriculture (8)	Belt Sea							
123	Copenhagen	The Sound	7612	7612	7612	3336	92	1991 = 1994 = 1995	
124	Agriculture (8)	The Sound							
125	The Swedish Sound Area	The Sound							
126	Skoghall	Kattegat	21800	18000	11898	9487	8010	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
127	Göteborg Archipelago	Kattegat	8900	8900	10100	10100	10100	1991 = 1994, 1997 = 1995	
128	Laholm Area	Kattegat							
129	Agriculture (8)	Kattegat							
130	Stockholm	Swedish Coast	10273	10273	9300	9300	9300	1991 = 1994, 1997 = 1995	
131	Nymölla	Bornholm Basin	44400	27400	20019	14738	13700	**deleted hot spot**	SNV 92 & 96 & 98 & 99
132	Kristianstad Area	Bornholm Basin							
SUM			**893235**	**686974**	**627833**	**560132**	**573608**		
SUM Without Coastal Lagoons			**874695**	**645604**	**580904**	**519397**	**534786**		

ABBREVIATIONS USED FOR SOURCES

SNV 92 Statens naturvårdsverket (Swedish EPA), Rapport 4086 : Skogsindustrins emissioner till vatten och luft 1991 (Forest industry emissions to water and air 1991), July 1992

SNV 96 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins emissioner till vatten och luft 1995 (Forest industry emissions to water and air 1995).

SNV 98 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins utsläpp till vatten och luft 1996 (Forest industry emissions to water and air 1996), April 1998.

SNV 99 Naturvårdsverket: Skogsindustrins utsläpp till vatten och luft samt avfallsmängder och energiförbrukning 1998 (Forest industry emissions to water and air 1998), August 1999.

FFIF 92 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1992 (Ympäristösuojelun Vuosikirja, 1992).

FFIF 96 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1996 (Ympäristönsuojelun vuosikirja, 1996)

FFIF 98 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1998 (Ympäristönsuojelun vuosikirja, 1998)

FFIF 99 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1999 (Ympäristönsuojelun vuosikirja, 1999)

MEF 91 Ministry of the Environment of Finland, Environmental priority action programme for Leningrad, Leningrad region Karelia and Estonia, Pre-feasibility study No 7 : Reduction of the environmental effects of Syasstroy pulp and paper mill and Volkhov aluminium factory, 1991.

DEPA 94 Danish Environmental Protection Agency and KCCV, Hot Spot Review - Vol 1, Executive Summary.Baltic Sea Environment Programme, Nov. 1994

SEPA 96 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1996.

SEPA 99 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1999.

Helcom 92 Conference Document No. 5/3 : The Baltic Sea Joint Comprehensive Environmental Action Programme, Diplomatic Conference on the Protection of the Marine Environment of the Baltic Sea Area, April 1992.

quest. 95 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1995.

quest. 96 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1996.

quest. 98 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1998.

quest. 99 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1999.

EBRD 99 Information on revision of JCP hot spots related to municipal services of St. Petersburg. Proposal for deletion of the JCP hot spot No 21. ("Removal of Phosphorous from waste water" St. Petersburg, municipal")

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots" in 1999.

Table 9 e. Inventory Table on Waste Water Discharges - AOX

Key	Site name	Receiving water body	AOX (tonnes /year) 1991	1994	1995	1997	1998	Comments	Sources of information *)
1	Rönnskärsverken	Bothnian Bay							
2	Metsä - Botnia Oy Kemi	Bothnian Bay	317	76	72	82	70,6	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
3	Husum Kraft Mill (1)	Bothnian Bay	530	250	220	185	190	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
4	Östrand (1)	Bothnian Bay	550	200	88	26	9	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
5	Vallvik (1)	Bothnian Bay	150	70	123	104	32	**deleted hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
6	Falun / Garpenberg	Bothnian Bay							
7	Outokumpu Group Harjavalta	Bothnian Bay							
8	Kemira Oy Vuorikemia	Bothnian Bay						**deleted hot spot**	
9	Fish Farming, Åland Seas	Archipelago & Åland Seas							
10	Agriculture (2)	Archipelago Sea							
11	YPT Joutseno	Gulf of Finland	673	150	79	76	68	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
12	Kaukas Lappeenranta	Gulf of Finland	674	110	147	112	111	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
13	E-G Kaukopää (Imatra)	Gulf of Finland	787	290	255	172	174	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
14	Syasstroi	Lake Lagoda	500	500	500	125	125	1995 = 1994 = 1991; was 9 months in standstill in 1997, AOX not measured 1998=1997 = 0,25 * 500, dam was broken in 1998	MEF 91
15	Volkhov	Lake Lagoda							
16	Sunila Oy - Kotka	Gulf of Finland	710	320	223	43	50	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
17	Helsinki Region	Gulf of Finland	3,8	3,8	4,2	4,5	4,5	1991 = 1994, 1998=1997	quest. 1995 & 1996
18	St. Petersburg	Gulf of Finland							
19	St. Petersburg (Urban) (3)	Gulf of Finland							
20	St. Petersburg (Suburban)	Gulf of Finland							
21	St. Petersburg	Gulf of Finland							
22	St. Petersburg	Gulf of Finland							
23	St. Petersburg	Gulf of Finland							
24	St. Petersburg Region	Gulf of Finland							
25	Narva	Gulf of Finland							
26	Kohtla Järve	Gulf of Finland	950	950	950	950	950	1991=data 1992, 1998=1997=1995=1994=1991	
27	Kehra	Gulf of Finland							
28	Tallinn	Gulf of Finland							
29	Tallinn	Gulf of Finland						**deleted hot spot**	
30	Gulf of Finland	Gulf of Finland							
31	Haapsalu	Estonian Cost							
32	Matsalu Bay	Estonian Cost							
33	Pärnu	Gulf of Riga							
34	Paide	Gulf of Riga							
35	Vohma Meat Combine	Gulf of Riga						**deleted hot spot**	
36	Gulf of Riga	Gulf of Riga							
37	Gulf of Riga Mgt	Gulf of Riga							
38	Sloka	Gulf of Riga							
39	Latbiofarm	Gulf of Riga							
40	Agriculture / Livestock	Gulf of Riga							
41	Siauliai	Gulf of Riga							
42	Riga (WWTP Phase II)	Daugava RB							
43	VEF Plant (Riga)	Daugava RB							
44	RER Plant (Riga)	Daugava RB							
45	Riga	Daugava RB							
46	Daugavpils	Daugava RB							
47	Vitebsk	Daugava RB							
48	Liepaja (3)	Latvian Coast							
49	Sovetsk	Nemunas RB							
50	Neman	Nemunas RB							
51	Kaunas	Nemunas RB							
52	Amalg Azotaz	Nemunas RB							
53	Kedainiai	Nemunas RB							
54	Kedainiai	Nemunas RB							
55	Panevezys	Nemunas RB							
56	Panevezys	Nemunas RB							
57	Marijampole	Nemunas RB							
58	Alytus	Nemunas RB							
59	Vilnius / Grigiskes	Nemunas RB							
60	Agriculture / Livestock	Nemunas RB							
61	Grodno	Nemunas RB							
62	Mazeikiai	Lithuanian Coast							
63	Klaipeda	Lithuanian Coast							
64	Cardboard Factory	Lithuanian Coast							
65	Palanga	Lithuanian Coast							
66	Kursiu Lagoon	Lith/Kal Coast							
67	Kaliningrad	Kaliningrad							
68	Pulp & Paper No 1, Kaliningrad	Kaliningrad						**deleted hot spot**	

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots" in 1999.

Key	Site name	Receiving water body	AOX (tonnes /year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
69	Pulp & Paper No 2 (4),Kaliningrad	Kaliningrad							
70	Kaliningrad	Kaliningrad							
71	Oil Bunkering Station	Kaliningrad							
72	Agriculture / Livestock	Kaliningrad							
73	Vistula Lagoon	Kal/Pol Coast							
74	XXXII. Koszalin - Jamno	Baltic Coast of Poland							
75	Gdynia - Debogorze	Baltic Coast of Poland							
76	Gdansk - Wschod, Oil Refinery	Baltic Coast of Poland							
77	Swiecie	Vistula							
78	Bydgoszcz - Fordon	Vistula							
79	Bydgoszcz - Kapusciska	Vistula							
80	Torun	Vistula							
81	Wloclawek - Anwil	Vistula							
82	Warsaw - Czajka	Vistula							
83	Warsaw - Poludnie, Siekierki	Vistula							
84	Warsaw - Pancerz	Vistula							
85	Lublin - Hajdow	Vistula							
86	Krakow - Plaszow	Vistula							
87	Krakow - Kujawy, T. Sendzimir Steel Plant	Vistula							
88	Katowice -East (6)	Vistula							
89	Jaworzno Organica Azot	Vistula							
90	Zgierz - Boruta Dyestuffs	Vistula							
91	Oswiecim - Dwory	Vistula	81	81	81	81	81	1998=1997 = 1995 = 1994 = 1991	
92	Bukowno - Boleslaw	Vistula							
93	Brest	Vistula							
94	Lvov	Vistula							
95	Agriculture / Livestock	Vistula							
96	Upper Basin (7)	Vistula							
97	Szczecin - Pomorzany	Oder/Odra							
98	Szczecin - Police, Skolwin	Oder/Odra							
99	Poznan	Oder/Odra							
100	Lodz	Oder/Odra							
101	Zielona Gora	Oder/Odra							
102	Legnica-Glogow	Oder/Odra							
103	Wroclaw	Oder/Odra	118	118	118	118	118	1991 = 1994 = 1995 = 1997=1998	
104	Wroclaw	Oder/Odra							
105	Ubocz - Luban	Oder/Odra							
106	Boleslawiec - Wizow	Oder/Odra							
107	Katowice-West	Oder/Odra							
108	Katowice-West	Oder/Odra							
109	Ostrava	Oder/Odra							
110	Ostrava Area	Oder/Odra							
111	Upper Basin (7)	Oder/Odra							
112	Agriculture / Livestock	Oder/Odra							
113	Odra Lagoon mgt	Oder/Odra							
114	Greifswald	Arkona Basin						**deleted hot spot**	
115	Neubrandenburg	Arkona Basin	0,6	0,6	0,6	0,3	0,4	1991 = 1994 = 1995, 1998 = 1887	
116	Stralsund	Arkona Basin						**deleted hot spot**	
117	Stavenhagen - Malchin	Arkona Basin	0,05	0,05	0,05	0,05	0,05	1991 = 1994 = 1995 = 1997 = 1998	
118	Agriculture	Arkona Basin	58	58	58	58	58	1991 = 1994 = 1995 = 1997 = 1998	quest.1996, no changes between 1994 and 1995
119	Lübeck	Belt Sea							
	119.1	Belt Sea					0,97		
	119.2	Belt Sea							
	119.3	Belt Sea	0,93	0,93	0,87	0,87	0,87	1998 = 1997 = 1995	
120	Wismar	Belt Sea	0,2	0,2	0,2	0,2	0,2	1991 = 1994 = 1995 = 1997 = 1998	quest.1995, no changes between 1994 and 1995
121	Rostock	Belt Sea	1,1	1,1	1,1	1,1	1,1	**deleted hot spot** & 1998 = 1997= 1995 = 1994 = 1991	
122	Agriculture (8)	Belt Sea							
123	Copenhagen	The Sound							
124	Agriculture (8)	The Sound							
125	The Swedish Sound Area	The Sound							
126	Skoghall	Kattegat	270	20	12	10	8	**deleted+G179 hot spot** *& 1994 = data 1993*	SNV 92 & 96 & 98 & 99
127	Göteborg Archipelago	Kattegat	9	9	10	10	10	1991 = 1994, 1998=1997 = 1995	
128	Laholm Area	Kattegat							
129	Agriculture (8)	Kattegat							
130	Stockholm	Swedish Coast							

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots" in 1999.

Key	Site name	Receiving water body	AOX (tonnes /year) 1991	1994	1995	1997	1998	Comments	Sources of information *)
131	Nymölla	Bornholm Basin	200	200	200	0	1	**deleted hot spot** & 1991= 1995 = 1994	SNV 92 & 96 & 98 & 99
132	Kristianstad Area	Bornholm Basin							
SUM			**6584**	**3409**	**3143**	**2159**	**2064**		
SUM Without Coastal Lagoons			**6584**	**3409**	**3143**	**2159**	**2064**		

ABBREVIATIONS USED FOR SOURCES

SNV 92 Statens naturvårdsverket (Swedish EPA), Rapport 4086 : Skogsindustrins emissioner till vatten och luft 1991 (Forest industry emissions to water and air 1991), July 1992

SNV 96 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins emissioner till vatten och luft 1995 (Forest industry emissions to water and air 1995).

SNV 98 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins utsläpp till vatten och luft 1996 (Forest industry emissions to water and air 1996), April 1998.

SNV 99 Naturvårdsverket: Skogsindustrins utsläpp till vatten och luft samt avfallsmängder och energiförbrukning 1998 (Forest industry emissions to water and air 1998), August 1999.

FFIF 92 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1992 (Ympäristösuojelun Vuosikirja, 1992).

FFIF 96 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1996 (Ympäristönsuojelun vuosikirja, 1996)

FFIF 98 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1998 (Ympäristönsuojelun vuosikirja, 1998)

FFIF 99 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1999 (Ympäristönsuojelun vuosikirja, 1999)

MEF 91 Ministry of the Environment of Finland, Environmental priority action programme for Leningrad, Leningrad region Karelia and Estonia, Pre-feasibility study No 7 : Reduction of the environmental effects of Syasstroy pulp and paper mill and Volkhov aluminium factory, 1991.

DEPA 94 Danish Environmental Protection Agency and KCCV, Hot Spot Review - Vol 1, Executive Summary.Baltic Sea Environment Programme, Nov. 1994

SEPA 96 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1996.

SEPA 99 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1999.

Helcom 92 Conference Document No. 5/3 : The Baltic Sea Joint Comprehensive Environmental Action Programme, Diplomatic Conference on the Protection of the Marine Environment of the Baltic Sea Area, April 1992.

quest. 95 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1995.

quest. 96 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1996.

quest. 98 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1998.

quest. 99 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1999.

EBRD 99 Information on revision of JCP hot spots related to municipal services of St. Petersburg. Proposal for deletion of the JCP hot spot No 21. ("Removal of Phosphorous from waste water" St. Petersburg, municipal")

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots" in 1999.

Table 9 f. Inventory Table on Emissions - NO2

Key	Site name	Receiving water body	NOx (tonnes /year)					Comments	Sources of information *)
			1991	1994	1995	1997	1998		
1	Rönnskärsverken	Bothnian Bay	218	218	130	20	20	1991 = 1994, 1998=1997	
2	Metsä - Botnia Oy Kemi	Bothnian Bay	1126	934	934	1255	946	**deleted hot spot** & 1994 = 1995	FFIF -92 & -96 & -98 & -99
3	Husum Kraft Mill (1)	Bothnian Bay	780	1300	1104	1021	1137	**deleted hot spot** & 1991 = 1994 = 1995	SNV 92 & 96 & 98 & 99
4	Östrand (1)	Bothnian Bay	360	700	833	779	639	**deleted hot spot** & 1991 = 1994 = 1995	SNV 92 & 96 & 98 & 99
5	Vallvik (1)	Bothnian Bay	220	320	427	388	238	**deleted hot spot** & 1991 = 1994 = 1995	SNV 92 & 96 & 98 & 99
6	Falun / Garpenberg	Bothnian Bay							
7	Fish Farming, Åland Seas	Bothnian Bay	200	200	200	200	200	1991 = 1994 = 1995	
8	Kemira Oy Vuorikemia	Bothnian Bay	364	634	586	586	586	**deleted hot spot** 1998=1997 = 1995	
9	Fish Farming, Åland Seas	Archipelago & Åland Seas							
10	Agriculture (2)	Archipelago Sea							
11	YPT Joutseno	Gulf of Finland	351	473	473	437	471	**deleted hot spot** & 1994 = 1995	FFIF -92 & -96 & -98 & -99
12	Kaukas Lappeenranta	Gulf of Finland	1740	1400	1400	1546	837	**deleted hot spot** & 1994 = 1995	FFIF -92 & -96 & -98 & -99
13	E-G Kaukopää (Imatra)	Gulf of Finland	1069	1847	1847	1892	1138	**deleted hot spot** & 1994 = 1995	FFIF -92 & -96 & -98 & -99
14	Syasstroi	Lake Lagoda	426	426	426	107	426	1991 = 1994 = 1995; was 9 months in a standstill in 1997, 1997 = 0,25 * 426, dam was broken in 1998	
15	Volkhov	Lake Lagoda	*300*	302	302	302	302	*1991 = data 1990* & 1994 = 1995 = 1997=1998	MEF 91
16	Sunila Oy - Kotka	Gulf of Finland	347	460	484	538	525	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
17	Helsinki Region	Gulf of Finland							
18	St. Petersburg	Gulf of Finland							
19	St. Petersburg (Urban) (3)	Gulf of Finland							
20	St. Petersburg (Suburban)	Gulf of Finland							
21	St. Petersburg	Gulf of Finland							
22	St. Petersburg	Gulf of Finland							
23	St. Petersburg	Gulf of Finland							
24	St. Petersburg Region	Gulf of Finland							
25	Narva	Gulf of Finland	12000	8837	9605	9682	8819		MEF 91, No. 13, Min of Env.1999
26	Kohtla Järve	Gulf of Finland	600	865	679	747	777		MEF 91, No. 15, Min of Env. 1999
27	Kehra	Gulf of Finland	0	0	2,5	10	58,9		Min. of Env. 1999
28	Tallinn	Gulf of Finland	2300	1640	1380	975	952		Min. of Env. 1999
29	Tallinn	Gulf of Finland						**deleted hot spot**	
30	Gulf of Finland	Gulf of Finland							
31	Haapsalu	Estonian Cost		32	45	38	34		Min. of Env. 1999
32	Matsalu Bay	Estonian Cost							
33	Pärnu	Gulf of Riga	200	203	180	200	215		Min. of Env. 1999
34	Paide	Gulf of Riga		57	54	83	78		Min. of Env. 1999
35	Vohma Meat Combine	Gulf of Riga	5,7	5,7	5,7	5,7	5,7	**deleted hot spot** & 1998=1997 = 1995 = 1994 = 1991	
36	Gulf of Riga	Gulf of Riga							
37	Gulf of Riga Mgt	Gulf of Riga							
38	Sloka	Gulf of Riga	190	2,55	1,8	1,8	1,8	production was reduced by 85 % between 1991 and 1994, 1998=1997 = 1995	HELCOM Bureau of Latvia, 1997
39	Latbiofarm	Gulf of Riga	0,7	0,95	0,6	0,34	3,84		HELCOM Bureau of Latvia, 1997
40	Agriculture / Livestock	Gulf of Riga	35000	15000	15000	15000	15000	as NH3-N, 1998=1997 = 1995 = 1994	HELCOM Bureau of Latvia, 1997
41	Siauliai	Gulf of Riga							
42	Riga (WWTP Phase II)	Daugava RB							
43	VEF Plant (Riga)	Daugava RB	2072	2072	2072	2072	0,042	1991 = 1994 = 1995 = 1997	
44	RER Plant (Riga)	Daugava RB	4,9	4,9	4,9	7,9	4,549	1991 = 1994 = 1995	
45	Riga	Daugava RB							
46	Daugavpils	Daugava RB	0,79	0,79	0,79	0,79	0,79	1991 = 1994 = 1995 = 1997=1998	HELCOM Bureau of Latvia, 1997
47	Vitebsk	Daugava RB	12683	12683	57124	57124	57124	1991 = 1994, 1997 = 1995=1998	
48	Liepaja (3)	Latvian Coast							
49	Sovetsk	Nemunas RB	410	410	422	422	329	1991 = 1994, 1997 = 1995	
50	Neman	Nemunas RB	145	145	184	184	35	1991 = 1994, 1997 = 1995	
51	Kaunas	Nemunas RB							
52	Amalg Azotaz	Nemunas RB	678	359	552	497	423		
53	Kedainiai	Nemunas RB							
54	Kedainiai	Nemunas RB	299	129	148	51	60		
55	Panevezys	Nemunas RB					4,06		
56	Panevezys	Nemunas RB		0,61	4,86	4,86	0,205	1997 = 1995	

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots" in 1999.

Key	Site name	Receiving water body	NOx (tonnes /year) 1991	1994	1995	1997	1998	Comments	Sources of information *)
57	Marijampole	Nemunas RB							
58	Alytus	Nemunas RB							
59	Vilnius / Grigiskes	Nemunas RB	30,345	55,705	42,7	40,8	0	data represents part of the hot spot	
60	Agriculture / Livestock	Nemunas RB							
61	Grodno	Nemunas RB	5251	5251	2682	2682	2682	1991 = 1994, 1998=1997	
62	Mazeikiai	Lithuanian Coast	928	1437	1182	2661	2530		
63	Klaipeda	Lithuanian Coast					0,0343		
64	Cardboard Factory	Lithuanian Coast	106,5	0	15,5	17,9	24,8	Company closed since 1994	
65	Palanga	Lithuanian Coast							
66	Kursiu Lagoon	Lith/Kal Coast							
67	Kaliningrad	Kaliningrad	2000	2000	2000	2000	2000	1991 = 1994 = 1995 = 1997=1998	
68	Pulp & Paper No 1, Kaliningrad	Kaliningrad	114,5	114,5	193	0	0	**deleted hot spot** 1991 = 1994, 1998=1997	
69	Pulp & Paper No 2 (4),Kaliningrad	Kaliningrad	297	297	346	346	337	1991 = 1994, 1997 = 1995	
70	Kaliningrad	Kaliningrad							
71	Oil Bunkering Station	Kaliningrad					13,438		
72	Agriculture / Livestock	Kaliningrad							
73	Vistula Lagoon	Kal/Pol Coast							
74	XXXII. Koszalin - Jamno	Baltic Coast of Poland					0,4		
75	Gdynia - Debogorze	Baltic Coast of Poland							
76	Gdansk - Wschod, Oil Refinery	Baltic Coast of Poland					1162,5		
77	Swiecie	Vistula	3300	2493	2493	1538	1692	1994 = 1995	
78	Bydgoszcz - Fordon	Vistula							
79	Bydgoszcz - Kapusciska	Vistula							
80	Torun	Vistula	2500	2500	2500	2500	2500	1998=1997 = 1995 = 1994 = 1991	
81	Wloclawek - Anwil	Vistula	2200	1729	1729	1729	2657	1997 = 1995 = 1994	
82	Warsaw - Czajka	Vistula							
83	Warsaw - Poludnie, Siekierki	Vistula	6800	8146	8146	7475	6576	1994 = 1995	
84	Warsaw - Pancerz	Vistula							
85	Lublin - Hajdow	Vistula	6	6	6	6	6	1998=1997 = 1995 = 1994 = 1991	
86	Krakow - Plaszow	Vistula							
87	Krakow - Kujawy, T. Sendzimir Steel Plant	Vistula	9800	9800	9800	9800	5629	1997 = 1995 = 1994 = 1991	
88	Katowice -East (6)	Vistula	8400	8400	8400	8400	8400	1991 = 1994 = 1995 = 1997	
89	Jaworzno Organica Azot	Vistula	0,001	0,001	0,001	2	4,2	1991 = 1994 = 1995	
90	Zgierz - Boruta Dyestuffs	Vistula	1200	940	940	913	913	1994 = 1995, 1998=1997	
91	Oswiecim - Dwory	Vistula	1700	1350	1350	2879	2675	1994 = 1995	
92	Bukowno - Boleslaw	Vistula	90	66	66	78	78	1994 = 1995, 1998=1997	
93	Brest	Vistula	657	657	543	543	543	1991 = 1994, 1998=1997 = 1995	
94	Lvov	Vistula							
95	Agriculture / Livestock	Vistula							
96	Upper Basin (7)	Vistula							
97	Szczecin - Pomorzany	Oder/Odra					1170		
98	Szczecin - Police, Skolwin	Oder/Odra	1500	2202	2202	2494	3210	1994 = 1995	
99	Poznan	Oder/Odra	3,9	2	2,4	1,7	1,7	1998=1997	
100	Lodz	Oder/Odra					1,5		
101	Zielona Gora	Oder/Odra							
102	Legnica-Glogow	Oder/Odra	220	230	230	230	230	1998=1997 = 1994 = 1995	
103	Wroclaw	Oder/Odra							
104	Wroclaw	Oder/Odra	8700	1275	1275	928	928	1994 = 1995, 1998=1997	
105	Ubocz - Luban	Oder/Odra	2	1	1	1	1	1994 = 1995	
106	Boleslawiec - Wizow	Oder/Odra							
107	Katowice-West	Oder/Odra							
108	Katowice-West	Oder/Odra							
109	Ostrava	Oder/Odra							
110	Ostrava Area	Oder/Odra							
111	Upper Basin (7)	Oder/Odra							
112	Agriculture / Livestock	Oder/Odra							
113	Odra Lagoon mgt	Oder/Odra							
114	Greifswald	Arkona Basin						**deleted hot spot**	
115	Neubrandenburg	Arkona Basin							
116	Stralsund	Arkona Basin						**deleted hot spot**	
117	Stavenhagen - Malchin	Arkona Basin							
118	Agriculture	Arkona Basin							
119	Lübeck	Belt Sea							
120	Wismar	Belt Sea							

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots" in 1999.

Key	Site name	Receiving water body	NOx (tonnes /year) 1991	1994	1995	1997	1998	Comments	Sources of information *)
121	Rostock	Belt Sea						**deleted hot spot**	
122	Agriculture (8)	Belt Sea							
123	Copenhagen	The Sound							
124	Agriculture (8)	The Sound							
125	The Swedish Sound Area	The Sound							
126	Skoghall	Kattegat	580	540	495	452	520	**deleted hot spot** & 1991 = 1994	SNV 92 & 96 & 98 & 99
127	Göteborg Archipelago	Kattegat							
128	Laholm Area	Kattegat							
129	Agriculture (8)	Kattegat							
130	Stockholm	Swedish Coast							
131	Nymölla	Bornholm Basin	870	814	721	670	676	**deleted hot spot** & 1991 = 1994	SNV 92 & 96 & 98 & 99
132	Kristianstad Area	Bornholm Basin							
SUM			**131346**	**101968**	**143973**	**144564**	**138552**		
SUM Without Coastal Lagoons			**131346**	**101968**	**143973**	**144564**	**138552**		

ABBREVIATIONS USED FOR SOURCES

SNV 92 Statens naturvårdsverket (Swedish EPA), Rapport 4086 : Skogsindustrins emissioner till vatten och luft 1991 (Forest industry emissions to water and air 1991), July 1992

SNV 96 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins emissioner till vatten och luft 1995 (Forest industry emissions to water and air 1995).

SNV 98 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins utsläpp till vatten och luft 1996 (Forest industry emissions to water and air 1996), April 1998.

SNV 99 Naturvårdsverket: Skogsindustrins utsläpp till vatten och luft samt avfallsmängder och energiförbrukning 1998 (Forest industry emissions to water and air 1998), August 1999.

FFIF 92 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1992 (Ympäristösuojelun Vuosikirja, 1992).

FFIF 96 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1996 (Ympäristönsuojelun vuosikirja, 1996)

FFIF 98 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1998 (Ympäristönsuojelun vuosikirja, 1998)

FFIF 99 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1999 (Ympäristönsuojelun vuosikirja, 1999)

MEF 91 Ministry of the Environment of Finland, Environmental priority action programme for Leningrad, Leningrad region Karelia and Estonia, Pre-feasibility study No 7 : Reduction of the environmental effects of Syasstroy pulp and paper mill and Volkhov aluminium factory, 1991.

DEPA 94 Danish Environmental Protection Agency and KCCV, Hot Spot Review - Vol 1, Executive Summary.Baltic Sea Environment Programme, Nov. 1994

SEPA 96 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1996.

SEPA 99 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1999.

Helcom 92 Conference Document No. 5/3 : The Baltic Sea Joint Comprehensive Environmental Action Programme, Diplomatic Conference on the Protection of the Marine Environment of the Baltic Sea Area, April 1992.

quest. 95 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1995.

quest. 96 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1996.

quest. 98 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1998.

quest. 99 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1999.

EBRD 99 Information on revision of JCP hot spots related to municipal services of St. Petersburg. Proposal for deletion of the JCP hot spot No 21. ("Removal of Phosphorous from waste water" St. Petersburg, municipal")

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots" in 1999.

Key	Site name	Receiving water body	SOx (tonnes /year) 1991	1994	1995	1997	1998	Comments	Sources of Information
1	Rönnskärsverken	Bothnian Bay	3960	3960	3162	3290	3290	1991 = 1994, 1998=1999	
2	Metsä - Botnia Oy Kemi	Bothnian Bay	933	460	460	374	323	**deleted hot spot** & 1994 = 1995	FFIF -92 & -96 & -98 & -99
3	Husum Kraft Mill (1)	Bothnian Bay	514	514	514	645	680	**deleted hot spot** & 1991 = 1994 = 1995	SNV 96 & 98 & 99
4	Östrand (1)	Bothnian Bay	298	298	298	263	468	**deleted hot spot** & 1991 = 1994 = 1995	SNV 96 & 98 & 99
5	Vallvik (1)	Bothnian Bay	196	196	196	175	284	**deleted hot spot** & 1991 = 1994 = 1995	SNV 96 & 98 & 99
6	Falun / Garpenberg	Bothnian Bay							
7	Outokumpu Group Harjavalta	Bothnian Bay	5244	5040	3300	3000	3040		
8	Kemira Oy Vuorikemia	Bothnian Bay	2500	1505	1817	1817	1817	**deleted hot spot** 1998**=**1997 = 1995	
9	Fish Farming, Åland Seas	Archipelago & Åland Seas							
10	Agriculture (2)	Archipelago Sea							
11	YPT Joutseno	Gulf of Finland	217	15	15	11	29	**deleted hot spot** & 1994 = 1995	FFIF -92 & -96 & -98 & -99
12	Kaukas Lappeenranta	Gulf of Finland	2100	883	883	383	331	**deleted hot spot** & 1994 = 1995	FFIF -92 & -96 & -98 & -99
13	E-G Kaukopää (Imatra)	Gulf of Finland	57	752	752	848	486	**deleted hot spot** & 1994 = 1995	FFIF -92 & -96 & -98 & -99
14	Syasstroi	Lake Lagoda	5500	6200	6200	1550	6200	*1991 = data 1990* & 1994 = 1995=1998; was 9 months in a standstill 1997, 1997 = 0,25 * 6200, dam was broken in 1998	MEF 1991
15	Volkhov	Lake Lagoda	*2100*	2855	2855	2855	2855	*1991 = data 1990* & 1994 = 1995 = 1997=1998	MEF 1991
16	Sunila Oy - Kotka	Gulf of Finland	325	386	232	286	357	**deleted hot spot**	FFIF -92 & -96 & -98 & -99
17	Helsinki Region	Gulf of Finland							
18	St. Petersburg	Gulf of Finland							
19	St. Petersburg (Urban) (3)	Gulf of Finland							
20	St. Petersburg (Suburban)	Gulf of Finland							
21	St. Petersburg	Gulf of Finland							
22	St. Petersburg	Gulf of Finland							
23	St. Petersburg	Gulf of Finland							
24	St. Petersburg Region	Gulf of Finland							
25	Narva	Gulf of Finland	149500	98016	74412	74789	67575		MEF 91, No. 13, Min of Env. 1999
26	Kohtla Järve	Gulf of Finland	11900	10915	9945	12115	11810		MEF 91, No. 15, Min. of Env. 1999
27	Kehra	Gulf of Finland	2500	493	309	65	824		Min. of Env. 1999
28	Tallinn	Gulf of Finland	18100	10005	5593	2427	3158		Min. of Env. 1999
29	Tallinn	Gulf of Finland						**deleted hot spot**	
30	Gulf of Finland	Gulf of Finland							
31	Haapsalu	Estonian Cost		154	291	475	384		Min. of Env. 1999
32	Matsalu Bay	Estonian Cost							
33	Pärnu	Gulf of Riga	2600	998	823	737	715		Min. of Env. 1999
34	Paide	Gulf of Riga		594	540	463	498		Min. of Env. 1999
35	Vohma Meat Combine	Gulf of Riga	127	127	127	127	127	**deleted hot spot** & 1998=1997 = 1995 = 1994 = 1991	
36	Gulf of Riga	Gulf of Riga							
37	Gulf of Riga Mgt	Gulf of Riga							
38	Sloka	Gulf of Riga	69	0	127	127	127	production was reduced by 85 % between 1991 and 1994, 1998=1997 = 1995	HELCOM Bureau of Latvia, 1997
39	Latbiofarm	Gulf of Riga	2	1	4	2	43		HELCOM Bureau of Latvia, 1997
40	Agriculture / Livestock	Gulf of Riga							
41	Siauliai	Gulf of Riga							
42	Riga (WWTP Phase II)	Daugava RB							
43	VEF Plant (Riga)	Daugava RB							
44	RER Plant (Riga)	Daugava RB	40	40	40	56	62	1995 = 1994 = 1991	
45	Riga	Daugava RB							
46	Daugavpils	Daugava RB	2	2	2	2	2	1997 = 1995 = 1994 = 1991	HELCOM Bureau of Latvia, 1997
47	Vitebsk	Daugava RB							
48	Liepaja (3)	Latvian Coast							
49	Sovetsk	Nemunas RB	4580	4580	4600	4600	4130	1991 = 1994, 1997 = 1995	
50	Neman	Nemunas RB	1517	1517	2400	2400	571	1991 = 1994	
51	Kaunas	Nemunas RB							
52	Amalg Azotaz	Nemunas RB	450	379	370	541	68		
53	Kedainiai	Nemunas RB							
54	Kedainiai	Nemunas RB	1619	563	649	280	372		
55	Panevezys	Nemunas RB					1		
56	Panevezys	Nemunas RB	4	0	0	0	0	1997 = 1995	
57	Marijampole	Nemunas RB							
58	Alytus	Nemunas RB							
59	Vilnius / Grigiskes	Nemunas RB	58	381	36	0,6	0,0	data 94 represents part of the hot spot	
60	Agriculture / Livestock	Nemunas RB							

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots" in 1999.

Key	Site name	Receiving water body	SOx (tonnes /year) 1991	1994	1995	1997	1998	Comments	Sources of Information
61	Grodno	Nemunas RB	10704	10704	5192	5192	5192	1991 = 1994, 1998=1997 = 1995	
62	Mazeikiai	Lithuanian Coast	3370	4304	2788	7579	9200		
63	Klaipeda	Lithuanian Coast					0		
64	Cardboard Factory	Lithuanian Coast	855	4	0	0	0	Company closed since 1994	
65	Palanga	Lithuanian Coast							
66	Kursiu Lagoon	Lith/Kal Coast							
67	Kaliningrad	Kaliningrad	10070	10070	10070	10070	10070	1991 = 1994 = 1995 = 1997=1998	
68	Pulp & Paper No 1, Kaliningrad	Kaliningrad	1651	1651	3050	0		**deleted hot spot** 1991 = 1994	
69	Pulp & Paper No 2 (4),Kaliningrad	Kaliningrad	3019	3019	2700	2700	654	1991 = 1994, 1997 = 1995	
70	Kaliningrad	Kaliningrad							
71	Oil Bunkering Station	Kaliningrad					98		
72	Agriculture / Livestock	Kaliningrad							
73	Vistula Lagoon	Kal/Pol Coast							
74	XXXII. Koszalin - Jamno	Baltic Coast of Poland					1		
75	Gdynia - Debogorze	Baltic Coast of Poland							
76	Gdansk - Wschod, Oil Refinery	Baltic Coast of Poland					10127		
77	Swiecie	Vistula	4700	4296	4296	3028	3398	1994 = 1995	
78	Bydgoszcz - Fordon	Vistula							
79	Bydgoszcz - Kapusciska	Vistula							
80	Torun	Vistula	10300	10300	10300	10300	10300	1991 = 1994 = 1995 = 1997=1998	
81	Wloclawek - Anwil	Vistula	6500	2573	2573	2573	6259	1994 = 1995 = 1997	
82	Warsaw - Czajka	Vistula							
83	Warsaw - Poludnie, Siekierki	Vistula	20500	20889	20889	19942	18942	1994 = 1995	
84	Warsaw - Pancerz	Vistula							
85	Lublin - Hajdow	Vistula	1	1	1	1	1	1998=1997 = 1995 = 1994 = 1991	
86	Krakow - Plaszow	Vistula							
87	Krakow - Kujawy, T. Sendzimir Steel Plant	Vistula	14700	14700	14700	14700	6965	1997 = 1995 = 1994 = 1991	
88	Katowice -East (6)	Vistula	13200	13200	13200	13200	13200	1991 = 1994 = 1995 = 1997=1998	
89	Jaworzno Organica Azot	Vistula	1	0	0	4	5	1994 = 1995	
90	Zgierz - Boruta Dyestuffs	Vistula	1900	1442	1442	1597	1597	1994 = 1995, 1998=1997	
91	Oswiecim - Dwory	Vistula	5000	5323	5323	4538	3485	1994 = 1995	
92	Bukowno - Boleslaw	Vistula	4400	2381	381	2868	2868	1998=1997	
93	Brest	Vistula	1216	1216	2477	2477	2477	1991 = 1994, 1998=1997 = 1995	
94	Lvov	Vistula	48	48	550	550	550	1998=1997 = 1995	
95	Agriculture / Livestock	Vistula							
96	Upper Basin (7)	Vistula							
97	Szczecin - Pomorzany	Oder/Odra					1031		
98	Szczecin - Police, Skolwin	Oder/Odra	6600	6804	6804	5925	6050	1991 = 1994	
99	Poznan	Oder/Odra	15	8	9	43	43	1998=1997	
100	Lodz	Oder/Odra					1		
101	Zielona Gora	Oder/Odra							
102	Legnica-Glogow	Oder/Odra	560	530	530	530	530	1997 = 1994 = 1995	
103	Wroclaw	Oder/Odra							
104	Wroclaw	Oder/Odra	1510	1510	1510	926	926	1991 = 1994 = 1995, 1998=1997	
105	Ubocz - Luban	Oder/Odra	9	5	5	4	7	1994 = 1995	
106	Boleslawiec - Wizow	Oder/Odra							
107	Katowice-West	Oder/Odra							
108	Katowice-West	Oder/Odra							
109	Ostrava	Oder/Odra							
110	Ostrava Area	Oder/Odra							
111	Upper Basin (7)	Oder/Odra							
112	Agriculture / Livestock	Oder/Odra							
113	Odra Lagoon mgt	Oder/Odra	464	368	368	284	235		
114	Greifswald	Arkona Basin						**deleted hot spot**	
115	Neubrandenburg	Arkona Basin							
116	Stralsund	Arkona Basin						**deleted hot spot**	
117	Stavenhagen - Malchin	Arkona Basin							
118	Agriculture	Arkona Basin							
119	Lübeck	Belt Sea							
120	Wismar	Belt Sea							
121	Rostock	Belt Sea						**deleted hot spot**	
122	Agriculture (8)	Belt Sea							
123	Copenhagen	The Sound							
124	Agriculture (8)	The Sound							
125	The Swedish Sound Area	The Sound							
126	Skoghall	Kattegat	240	240	240	365	528	**deleted hot spot** & 1991 = 1994 = 1995	SNV 96 & 98 & 99
127	Göteborg Archipelago	Kattegat							
128	Laholm Area	Kattegat							

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots" in 1999.

Key	Site name	Receiving water body	SOx (tonnes /year) 1991	1994	1995	1997	1998	Comments	Sources of Information
129	Agriculture (8)	Kattegat							
130	Stockholm	Swedish Coast							
131	Nymölla	Bornholm Basin	626	626	274	352	692	**deleted hot spot** & 1991 = 1994	SNV 96 & 98 & 99
132	Kristianstad Area	Bornholm Basin							
SUM			**339172**	**268041**	**230625**	**224451**	**226059**		
SUM Without Coastal Lagoons			**338708**	**267673**	**230257**	**224167**	**225824**		

ABBREVIATIONS USED FOR SOURCES

SNV 92 Statens naturvårdsverket (Swedish EPA), Rapport 4086 : Skogsindustrins emissioner till vatten och luft 1991 (Forest industry emissions to water and air 1991), July 1992

SNV 96 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins emissioner till vatten och luft 1995 (Forest industry emissions to water and air 1995).

SNV 98 Statens naturvårdsverket (Swedish EPA) : Skogsindustrins utsläpp till vatten och luft 1996 (Forest industry emissions to water and air 1996), April 1998.

SNV 99 Naturvårdsverket: Skogsindustrins utsläpp till vatten och luft samt avfallsmängder och energiförbrukning 1998 (Forest industry emissions to water and air 1998), August 1999.

FFIF 92 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1992 (Ympäristösuojelun Vuosikirja, 1992).

FFIF 96 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1996 (Ympäristönsuojelun vuosikirja, 1996)

FFIF 98 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1998 (Ympäristönsuojelun vuosikirja, 1998)

FFIF 99 Finnish Forest Industry Federation (Suomen Metsäteollisuuden Keskusliitto), Annual environmental report, 1999 (Ympäristönsuojelun vuosikirja, 1999)

MEF 91 Ministry of the Environment of Finland, Environmental priority action programme for Leningrad, Leningrad region Karelia and Estonia, Pre-feasibility study No 7 : Reduction of the environmental effects of Syasstroy pulp and paper mill and Volkhov aluminium factory, 1991.

DEPA 94 Danish Environmental Protection Agency and KCCV, Hot Spot Review - Vol 1, Executive Summary.Baltic Sea Environment Programme, Nov. 1994

SEPA 96 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1996.

SEPA 99 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1999.

Helcom 92 Conference Document No. 5/3 : The Baltic Sea Joint Comprehensive Environmental Action Programme, Diplomatic Conference on the Protection of the Marine Environment of the Baltic Sea Area, April 1992.

quest. 95 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1995.

quest. 96 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1996.

quest. 98 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1998.

quest. 99 Questionnaires on status of JCP hot spots filled in by HELCOM PITF hot spots contact persons and send to the HELCOM secretariat in 1999.

EBRD 99 Information on revision of JCP hot spots related to municipal services of St. Petersburg. Proposal for deletion of the JCP hot spot No 21. ("Removal of Phosphorous from waste water" St. Petersburg, municipal")

*) When not otherwise stated data is based on the answers given to the "questionnaires on status of JCP Hot Spots" in 1999.

Country: **Belarus** — 3 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
47		Vitebsk	Municipal & Industrial	Daugava RB	BY	Ongoing	-	Pre-feasibility study. Information from SEPA 99.	-
61		Grodno	Municipal & Industrial	Nemunas RB	BY	-	-	-	-
93		Brest	Municipal & Industrial	Vistula	BY	Ongoing	No	Information from the 5th inventory. Ongoing monitoring of water and air by "Belhydromet"	2010

Country: **Czech** — 2 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
109	X	Ostrava	Municipal & Industrial	Oder/Odra	CS	-	-	-	-
110	X	Ostrava Area	Industry (Chemical,Pulp & Paper, etc.)	Oder/Odra	CS	-	-	-	-

Country: **Czech/Poland** — 1 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
111		Upper Basin (7)	Industry (Mining)	Oder/Odra	CS/PL	No	No	Information from the year 1996.	2005

Country: **Denmark** — 3 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
122		Agriculture (8)	Agricultural Runoff	Belt Sea	DK	No	Ongong	Information from the year 1994. The Action Plan on the Aquatic Environment II of February 1998	2000
123		Copenhagen	Municipal	The Sound	DK	Completed	Cpmpleted	Finished. Waiting for removal.	
124		Agriculture (8)	Agricultural Runoff	The Sound	DK	No	Ongoing	Information from the 6th inventory. The Action Plan on the Aquatic Environment II of February 1998	1992 - 2001
129		Agriculture (8)	Agricultural Runoff	Kattegat	DK	No	Ongoing	Information from the 6th inventory.The Action Plan on the Aquatic Environment II of February 1998	-

Country: **Estonia** — 10 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
25	X	Narva	Industry (Oil Shale Power Plant)	Gulf of Finland	EE	Ongoing	Planned	Refurbishment study was completed	1997 - 2005
26		Kohtla Järve	Area Municipal & Industrial	Gulf of Finland	EE	Ongoing	Ongoing	Feasibility study, Kohtla-Järve WWTP project, evaluation of existing WWTP, WWTP reconstruction and stabilisation ponds for ash heaps drainage water are carried out. Pipeline and pumping station design for pumping ash heap drainage water to WWTP was carried out. Start-up of two post sedimentation tanks are underway.	-2002
27		Kehra	Industry (Pulp & Paper)	Gulf of Finland	EE	Ongoing	Ongoing	Reduction of aeriation system, replacing of the collecting and discharge electrodes of the electrostatic precipitation and erection of the fired boiler. Reconstruction of the existing boiler no 4 to the boiler fired bark and sawdust.	1998 - 1999
28	X	Tallinn	Municipal & Industrial	Gulf of Finland	EE	Ongoing	Ongoing	Reconstruction of sewerage pipelines, construction of stormwater reservoir	1999 - 2001

Country: **Estonia** 10 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
30		Gulf of Finland	Agricultural Runoff	Gulf of Finland	EE	Ongoing	No	Baltic Agricultural Run-off Programme. Information, education and extention in Estonia. Agricultural Run-off Management Programme (demonstration watersheds and agri-environmental legislation and policy). Education and Extention Service on the Island of Saarenmaa. Investment loans for ecological farming in Estonia. Maatsalu Bay Environmental Management Agricultural Run-off Demonstration and Information Activities 1998 - 1999.	#REF!
31		Haapsalu	Municipal & Industrial	Estonian Cost	EE	Ongoing	Ongoing	Nitrogen reduction of the Haapsalu WWTP. Sludge treatment of the Haapsalu WWTP, WWTP is reconstructed.	2000 - 2003
32	X	Matsalu Bay	Coastal Lagoon / Wetland	Estonian Cost	EE	Ongoing	Ongoing	Baltic Agricultural Run-off Programme. Information, education and extention in Estonia. Agricultural Run-off Management Programme (demonstration watersheds and agri-environmental legislation and policy). Education and Extention Service on the Island of Saarenmaa. Investment loans for ecological farming in Estonia. Maatsalu Bay Environmental Management Agricultural Run-off Demonstration and Information Activities 1998 - 1999.	-
33	X	Pärnu	Municipal & Industrial	Gulf of Riga	EE	Ongoing	Planned	Renovation of WWTP screening, grid removal, pre-sedimentation and SCADA units. Ongoing technical design of renovation of mechanical section.Under planning renovation of mechanical section.	1999 - 2000
34		Paide	Municipal & Industrial	Gulf of Riga	EE	Ongong	Ongoing	Mechanical pretreatment of waste water, chemical tratment of waste water, sludge treatment	1999 - 2001
36		Gulf of Riga	Agricultural Runoff	Gulf of Riga	EE	Ongoing	No	Inventory of agricultural point-pollution sources and risks in sensitive areas of groundwater pollution. Implementation of recommendations of reduction of agricultural diffuse pollution.	-

Country: **Estonia/Latvia** 1 Hot Spot

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
37	X	Gulf of Riga Mgt	Coastal Lagoon / Wetland	Gulf of Riga	EE/LV	-	-	No information	-

Country: **Finland** 4 Hot Spot

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
7		Outokumpu Group Harjavalta	Industry (Metal Smelter)	Bothnian Sea	FI	No	Ongoing	Increasing of waste water treating capasity, new electrostatic presipitator for copper smelter, improvements of bag filter. Air pollution control measures are completed.	1998 - 1999
9		Fish Farming, Åland Seas	Fish Farming	Archipelago & Åland Seas	FI	Ongoing	Ongoing	Research and development Program to decrease environmental impacts of fishing in Archipelago Sea and Åland.	-2005
10		Agriculture (2)	Agricultural Runoff	Archipelago Sea	FI	Ongoing	Ongoing	Agri-environmental programme	1995 - 1999
17		Helsinki Region	Municipal	Municipal	FI	No	Ongoing	To ameliorate 50 % N-removal to 70 %	1996 - 1998

Country: **Germany** 5 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
115		Neubrandenburg	Municipal & Industrial	Arkona Basin	DE	Ongoing	Completed	Substantial extention (90000 PE to 140000 PE) and modernization, building commencement 1996	1993 - 1999
117		Stavenhagen - Malchin	Municipal & Industrial	Arkona Basin	DE	Ongoing	Completed	Substantial extention (80000 PE to 300000 PE) and modernization, building commencement 1996/1997	1991 - 1999
118		Agriculture	Agricultural Runoff	Arkona Basin	DE	Ongoing	Ongoing	Information from the 6th inventory. Monitoring programme, management of fen land soil.	-
119		Lübeck	Municipal & Industrial	Belt Sea	DE	Ongoing	Ongoing	Plant is currently undergoing reconstruction and expancion, construction work started 1/98	1997 - 2004
120		Wismar	Municipal & Industrial	Belt Sea	DE	Ongoing	Completed	Substantial extention resp. rebuilding of plant, building commencement 1996. Training of staff.	1992 - 2001

Country: **Latvia** 9 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
38	X	Sloka	Industry (Pulp & Paper)	Gulf of Riga	LV	No	No	The plant is privatised and the buildings are under dismantling. The production of pulp and paper is ceased.	-
39	X	Latbiofarm	Industry (Pharmaceutical)	Gulf of Riga	LV	No	No	0	-
40	X	Agriculture / Livestock	Agricultural Runoff	Gulf of Riga	LV	Ongoing	Completed	Demonstration fields and University Advisory Services are ongoing projects. BEAROP 1999 - 2001. Environmental Monitoring in Agriculture 1998 - 2000	-2001
42	X	Riga (WWTP Phase II)	Municipal & Industrial	Daugava RB	LV	Ongoing	Ongoing	A large investment programme is under preparation for upgrading and expansion of the Riga sewerage system.	1996 -2000
43		VEF Plant (Riga)	Industry (Metals)	Daugava RB	LV	No	No	Other projects are not decided due to expected privatization of Plant (info year 1994).	-
44		RER Plant (Riga)	Industry (Metals)	Daugava RB	LV	No	No	0	-
45		Riga	Industry (Various)	Daugava RB	LV	No	No	The biggest industrial plants have eliminated their production significantly	-
46	X	Daugavpils	Municipal & Industrial	Daugava RB	LV	Ongoing	No	Rehabilitation of pumping stations and sewerage network, development a new well field, construction a new transmission pipeline and iron removal plant in water supply, management of municipal serv.	1996 - 2000
48	X	Liepaja (3)	Municipal & Industrial	Latvian Coast	LV	Ongoing	Completed	Water and wastewater treatment project	-

Country: **Lithuania** 15 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
41	X	Siauliai	Municipal & Industrial	Gulf of Riga	LT	Ongoing	Ongoing	Water Pollution Control, Air Pollution Control and Waste Management Activities	1999 - 2000
51	X	Kaunas	Municipal & Industrial	Nemunas RB	LT	Ongoing	Ongoing	Mechanical WWTP	1991 - 1999
52		Amalg Azotaz	Industry (Fertilizer)	Nemunas RB	LT	Ongoing	No	Water pollution control	-
53		Kedainiai	Municipal & Industrial	Nemunas RB	LT	Ongoing	No	Water pollution control activities ongoing	-
54		Kedainiai	Industry (Chemicals)	Nemunas RB	LT	Ongoing	No	Monitoring and environmental assessment activities ongoing	-
55		Panevezys	Municipal & Industrial	Nemunas RB	LT	Ongoing	Planned	Policy and management support ongoing. Technical design, full scale construction and training planned	1998 - 2004
56		Panevezys	Industry (Food)	Nemunas RB	LT	No	No	-	-
57		Marijampole	Municipal & Industrial	Nemunas RB	LT	Planned	No	N and P removal planned	-
58		Alytus	Municipal & Industrial	Nemunas RB	LT	Ongoing	Ongoing	Upgrading and extention of Alytus WWTP including biological nutrients removal. To be completed at the end of 1999.	1991 - 1999
59	X	Vilnius / Grigiskes	Municipal & Industrial	Nemunas RB	LT	Ongoing	Ongoing	Ongoing activities are monitoring and environmental assessment, pilot plant test, policy and management support, and training.	1995 - 2001
60	X	Agriculture / Livestock	Agricultural Runoff	Nemunas RB	LT	-	-	-	-
62		Mazeikiai	Oil Refinery / Marine Terminal	Lithuanian Coast	LT	No	No	-	-
63	X	Klaipeda	Municipal & Industrial	Lithuanian Coast	LT	Planned	No	Planned long term training programme (9 months)	-
64		Cardboard Factory	Industry (Paper)	Lithuanian Coast	LT	No	No	Factory stopped production in 1994.	-
65		Palanga	Municipal	Lithuanian Coast	LT	Ongoing	Ongoing	Full scale construction monitoring and environmental assessment ongoing and training planned. All activities are related to water pollution control.	1993 - 1999

Country: **Lithuania/Russia** 1 Hot Spot

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
66	X	Kursiu Lagoon	Coastal Lagoon / Wetland	Lith/Kal Coast	LT/RU	-	-	-	-

Country: **Poland** 34 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
74	X	XXXII. Koszalin - Jamno	Municipal & Industrial	Baltic Coast of Poland	PL	Ongoing	Planned	Construction for N-removal in compliance with Polish standards (N<30 mg/dm3) - completed in 1998. Boiler house construction completed in 1998. Realisation of technical project of N-removal in compliance with EU-directives. Realisation of N-removal (enlargement of WWTP) project preparation and specification in 1999 and realisation in 2000- 2002	1999 - 2002
75	X	Gdynia - Debogorze	Municipal & Industrial	Baltic Coast of Poland	PL	Completed	Completed	-	-
76	X	Gdansk - Wschod, Oil Refinery	Municipal & Industrial	Baltic Coast of Poland	PL	Completed	Ongoing	-	1999 - 2001
77		Swiecie	Industry (Pulp & Paper)	Vistula	PL	Ongoing	Completed	From January 1999 the production of bleached pulp has been stopped. Investments in WWTP have been conducted to introduce secondary treatment stage for waste water discharges. From 1999 waste waters are treated on double biological and chemical stages. Monitoring programme has been established and implemented. It covers full control of contamination in waste water and emissions to the atmosphere, monitoring of contamination of ground water in the buffer zone and beyond.	1997 - 1999
78	X	Bydgoszcz - Fordon	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Planned technology of waste water treatment aims at reduction of nutrients.	1991 - 2000
79		Bydgoszcz - Kapusciska	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Mechanical and biological WWTP under construction	1997 - 2000
80	X	Torun	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Enlargement of sewerage system for Torum. Composting of communal wastes. Composting of sludge.	-1999
81	X	Wloclawek - Anwil	Industries (Chemical)	Vistula	PL	Ongoing	Ongoing	Modernization of waste water disposal and water management	-2000
82		Warsaw - Czajka	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Enlargement of WWTP. Nutrient removal.	1998 - 2005
83	X	Warsaw - Poludnie, Siekierki	Municipal & Industrial	Vistula	PL	Ongoing	Planned	Construction of WWTP	1992 - 2002
84		Warsaw - Pancerz	Municipal & Industrial	Vistula	PL	Completed	Planned	WWTP construction.	-
85		Lublin - Hajdow	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Modernization of WWTP in order to reduce nutrients.	1998 - 2004
86	X	Krakow - Plaszow	Municipal & Industrial	Vistula	PL	Ongoing	Planned	Water pollution control and waste management activities are ongoing.	2000 - 2004
87	X	Krakow - Kujawy, T. Sendzimir Steel Plant	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	1st stage 1991 - 1999. 2 stage 2003 - 2004 planned to reconstruct of sewage system in order to conduct waste water from other parts of the city.	1991 - 2004
88	X	Katowice -East (6)	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	-	1996 - 2002
89		Jaworzno Organica Azot	Industry (Chemical)	Vistula	PL	Planned	Planned	Planned: modernization of waste water treatment technology and modernization of production line of insecticides. Completed: modernisation of production line of birlen also to eliminate use of chlorine and modernization of landfill of wastes.	1996 - 2000
90		Zgierz - Boruta Dyestuffs	Industry (Chemical)	Vistula	PL	Ongoing	Ongoing	-	1993 - 1999
91		Oswiecim - Dwory	Industry (Chemical)	Vistula	PL	Ongoing	No	Study "Enhanced program of pollutants emissions limitation" was made. There is lack of funds to make investments.	-
92		Bukowno-Boleslaw	Industry (Metals)	Vistula	PL	Ongoing	Ongoing	-	2000
95	X	Agriculture / Livestock	Agricultural Runoff	Vistula	PL	-	-	-	-
96		Upper Basin (7)	Industrial (Mining)	Vistula	PL	No	No	-	2002

Country: **Poland** — 34 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
97	X	Szczecin - Pomorzany	Municipal & Industrial	Oder/Odra	PL	Planned	Planned	Construction of WWTP.	1999 - 2003
98	X	Szczecin - Police, Skolwin	Industry (Fert, P & P)	Oder/Odra	PL	Ongoing	Ongoing	Chmical plant ongoing:construction of band conveyor for salt transport, desulphurisation of the gases in order to reduce CO2 emissions, reuse of FeSO4. Chemical plant completed: shifting from use of powered fuel burners to low emission burners in order to reduce NOx emissons and dust emissions below 50 mg/m3, continuous monitoring of heat power plant EC-II. Chemical plant planned: automation of emission stations - new piezometer of FeSO4. Paper industry ongoing: construction of biological WWTP for municipal and industrial waste water. Paper industry: fluidal boiler construction.	Chemical plant 1992 - 2000, Paper industry 1999 - 2000
99		Poznan	Municipal & Industrial	Oder/Odra	PL	Ongoing	Ongoing	Ongoing water pollution control and waste management. Planned air pollution control.	2000 -
100	X	Lodz	Municipal & Industrial	Oder/Odra	PL	Ongoing	Ongoing	Storage of sludge and further utilization of sludge. Entry chamber, crash screen and desander. Mechanical and biological treatment and sludge treatment. Under consideration is inceneration and composting.	1974 - 2002
101		Zielona Gora	Municipal & Industrial	Oder/Odra	PL	Completed	Completed	WWTP construction.	1998
102	X	Legnica-Glogow	Industry (N-Fertilizer,Copper mining,Food)	Oder/Odra	PL	No	No	Modernization of WWTP is planned but due to lack of funds investments have not been done.	-
103		Wroclaw	Municipal & Industrial	Oder/Odra	PL	Ongoing	Ongoing	Upgrading of WWTP	1996 - 2000
104		Wroclaw	Industry (Chemical,Food,Textiles)	Oder/Odra	PL	No	No	-	-
105		Ubocz - Luban	Industry (Fertilizer)	Oder/Odra	PL	No	No	Lack of funds.	-
106		Boleslawiec - Winzow	Industry (Fertilizer)	Oder/Odra	PL	Ongoing	Planned	Water pollution control	2000 -
107	X	Katowice-West	Municipal & Industrial	Oder/Odra	PL	Completed	Ongoing	Installation of chemical precipitation of phosphorus.	1999 - 2000
108	X	Katowice-West	Industry (Coke,Steel,Fertilizer)	Oder/Odra	PL	-	-	-	-
112	X	Agriculture / Livestock	Agricultural Runoff	Oder/Odra	PL	Ongoing	No	Information from the 5th inventory.	-

Country: **Poland/Germany** — 1 Hot Spot

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
113	X	Odra Lagoon mgt	Coastal Lagoon / Wetland	Oder/Odra	PL/DE	Ongoing	Ongoing	Construction of biological WWTP with a new sewage disposal system. Gasification of Miedzyzdroje. Reclamation of storage yard.	1998 - 2001

Country: **Russia** — 16 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
14		Syasstroi	Industry (Pulp & Paper)	Lake Lagoda	RU	Ongoing	Ongoing	Paper mill had an accident in December 1998.	-
15		Volkhov	Industry (Aluminum)	Lake Lagoda	RU	Ongoing	Ongoing	Information from the sixth inventory.	-
18	X	St. Petersburg	Municipal (Connection Sewers)	Gulf of Finland	RU	Ongoing	Ongoing	Full scale construction of new sewer connection.	1993 - 2004
19	X	St. Petersburg (Urban) (3)	Municipal & Industrial	Gulf of Finland	RU	Ongoing	Ongoing	Full scale construction of WWTPs. Water sector development programme.	-
20	X	St. Petersburg (Suburban)	Municipal & Industrial	Gulf of Finland	RU	Ongoing	Ongoing	-	-
21		St. Petersburg	Municipal	Gulf of Finland	RU	Ongoing	Ongoing	Feasibility studies and planning. Pilot plant study at one WWTP.	-
22		St. Petersburg	Industry (Metal Plating)	Gulf of Finland	RU	Ongoing	Ongoing	Information from the sixth inventory. Modernization of sludge treatment at the Central WWTP. Storage capacity for sludge from waste waters.	-
23		St. Petersburg	Hazardous Waste	Gulf of Finland	RU	Ongoing	Ongoing	Waste Management	-
24	X	St. Petersburg Region	Agriculture (Large Livestock Farms)	Gulf of Finland	RU	Planned	Planned	Agricultural Demonstration projects. Vegetable production. Agriculture advisory services. Marketing improvements.	1997 - 1999
49	X	Sovetsk	Industry (Pulp & Paper)	Nemunas RB	RU	Completed	Ongoing	Construction is stopped due to the lack of centralised funding.	1983 - 2000
50	X	Neman	Industry (Pulp & Paper)	Nemunas RB	RU	Ongoing	No	Construction is stopped due to the lack of centralised funding. The mill has practically not been working in 1998.	1988 -2000
67	X	Kaliningrad	Municipal & Industrial	Kaliningrad	RU	Ongoing	Ongoing	Construction of combined biological WWTP for the municipal waste-water of the city of Kalaininggrad and local industries for total projected capacity of 169 million m3/year.	1976 - 2000
69		Pulp & Paper No 2 (4),Kaliningrad	Industry (Pulp & Paper)	Kaliningrad	RU	Ongoing	Ongoing	Re-construction of internal sewerage system and local WWTP and connection of them to combined biological WWTP for the municipal waste-water of the city of Kaliningrad and local industries.	1983 - 2000
70		Kaliningrad	Hazardous Waste	Kaliningrad	RU	No	No	Landfilling ongoing	-
71		Oil Bunkering Station	Industry (Oil storage)	Kaliningrad	RU	No	No	-	-
72		Agriculture / Livestock	Agricultural Runoff	Kaliningrad	RU	Ongoing	Ongoing	-	1995 - 2000

Country: **Russia/Poland** — 1 Hot Spot

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
73	X	Vistula Lagoon	Coastal Lagoon / Wetland	Kal/Pol Coast	RU/PL	No	Completed	Coastal Zone Management Plan for the Vistula Lagoon has been finnished.	-

Country: **Sweden** — 7 Hot Spots

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
1	0	Rönnskärsverken	Industry (Metal Smelter)	Bothnian Bay	SE	Ongoing	Ongoing	Production increase to 300 000 t/y of copper from 140 000 t/y today.	1996 - 2000
6	0	Falun /Garpenberg	Waste treatment (Mining)	Bothnian Bay	SE	Ongoing	Ongong	Waste Water tratment plant, Dry cover of mine tailings	1994 - 2005
125		The Swedish Sound	Agricultural Runoff	The Sound	SE	Ongoing	Ongong	-	-
127		Göteborg Archipelago	Municipal	Kattegat	SE	Ongong	Ongoing	-	-
128		Laholm Area	Agricultural Runoff	Kattegat	SE	Ongoing	Ongoing	-	-
130		Stockholm	Municipal	Swedish Coast	SE	Ongoing	Ongoing	-	1999
132		Kristianstad Area	Agricultural Runoff	Bornholm Basin	SE	Ongoing	Ongoing	-	-

Country: **Ukraine** — 1 Hot Spot

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
94	X	Lvov	Municipal & Industrial	Vistula	UA	No	No	Lack of funds.	-

Site type: **Agricultural**

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
9		Fish Farming, Åland Seas	Fish Farming	Archipelago & Åland Seas	FI	Ongoing	Ongoing	Research and development Program to decrease environmental impacts of fishing in Archipelago Sea and Åland.	-2005
10		Agriculture (2)	Agricultural Runoff	Archipelago Sea	FI	Ongoing	Ongoing	Agri-environmental programme	1995 - 1999
24	X	St. Petersburg Region	Agriculture (Large Livestock Farms)	Gulf of Finland	RU	Planned	Planned	Agricultural Demonstration projects. Vegetable production. Agriculture advisory services. Marketing improvements.	1997 - 1999
30		Gulf of Finland	Agricultural Runoff	Gulf of Finland	EE	Ongoing	No	Baltic Agricultural Run-off Programme. Information, education and extention in Estonia. Agricultural Run-off Management Programme (demonstration watersheds and agri-environmental legislation and policy). Education and Extention Service on the Island of Saarenmaa. Investment loans for ecological farming in Estonia. Maatsalu Bay Environmental Management Agricultural Run-off Demonstration and Information Activities 1998 - 1999.	-
36		Gulf of Riga	Agricultural Runoff	Gulf of Riga	EE	Ongoing	No	Inventory of agricultural point-pollution sources and risks in sensitive areas of groundwater pollution. Implementation of recommendations of reduction of agricultural diffuse pollution.	-
40	X	Agriculture / Livestock	Agricultural Runoff	Gulf of Riga	LV	Ongoing	Completed	Demonstration fields and University Advisory Services are ongoing projects. BEAROP 1999 - 2001. Environmental Monitoring in Agriculture 1998 - 2000	-2001
60	X	Agriculture / Livestock	Agricultural Runoff	Nemunas RB	LT	-	-	-	-
72		Agriculture / Livestock	Agricultural Runoff	Kaliningrad	RU	Ongoing	Ongoing	-	1995 - 2000
95	X	Agriculture / Livestock	Agricultural Runoff	Vistula	PL	-	-	-	-
112	X	Agriculture / Livestock	Agricultural Runoff	Oder/Odra	PL	Ongoing	No	Information from the 5th inventory.	-
118		Agriculture	Agricultural Runoff	Arkona Basin	DE	Ongoing	Ongoing	Information from the 6th inventory. Monitoring programme, management of fen land soil.	-
122		Agriculture (8)	Agricultural Runoff	Belt Sea	DK	No	Ongong	Information from the year 1994. The Action Plan on the Aquatic Environment II of February 1998	2000
124		Agriculture (8)	Agricultural Runoff	The Sound	DK	No	Ongoing	Information from the 6th inventory. The Action Plan on the Aquatic Environment II of February 1998	1992 - 2001
125		The Swedish Sound	Agricultural Runoff	The Sound	SE	Ongoing	Ongong	-	-
128		Laholm Area	Agricultural Runoff	Kattegat	SE	Ongoing	Ongoing	-	-
129		Agriculture (8)	Agricultural Runoff	Kattegat	DK	No	Ongoing	Information from the 6th inventory.The Action Plan on the Aquatic Environment II of February 1998	-
132		Kristianstad Area	Agricultural Runoff	Bornholm Basin	SE	Ongoing	Ongoing	-	-

Site type: **Coastal lagoon**

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
32	X	Matsalu Bay	Coastal Lagoon / Wetland	Estonian Cost	EE	Ongoing	Ongoing	Baltic Agricultural Run-off Programme. Information, education and extention in Estonia. Agricultural Run-off Management Programme (demonstration watersheds and agri-environmental legislation and policy). Education and Extention Service on the Island of Saarenmaa. Investment loans for ecological farming in Estonia. Maatsalu Bay Environmental Management Agricultural Run-off Demonstration and Information Activities 1998 - 1999.	-
37	X	Gulf of Riga Mgt	Coastal Lagoon / Wetland	Gulf of Riga	EE/LV	-	-	No information	-
66	X	Kursiu Lagoon	Coastal Lagoon / Wetland	Lith/Kal Coast	LT/RU	-	-	-	-
73	X	Vistula Lagoon	Coastal Lagoon / Wetland	Kal/Pol Coast	RU/PL	No	Completed	Coastal Zone Management Plan for the Vistula Lagoon has been finnished.	-
113	X	Odra Lagoon mgt	Coastal Lagoon / Wetland	Oder/Odra	PL/DE	Ongoing	Ongoing	Construction of biological WWTP with a new sewage disposal system. Gasification of Miedzyzdroje. Reclamation of storage yard.	1998 - 2001

Site type: **Industrial**

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
1	0	Rönnskärsverken	Industry (Metal Smelter)	Bothnian Bay	SE	Ongoing	Ongoing	Production increase to 300 000 t/y of copper from 140 000 t/y today.	1996 - 2000
7		Outokumpu Group Harjavalta	Industry (Metal Smelter)	Bothnian Sea	FI	No	Ongoing	Increasing of waste water treating capasity, new electrostatic presipitator for copper smelter, improvements of bag filter. Air pollution control measures are completed.	1998 - 1999
14		Syasstroi	Industry (Pulp & Paper)	Lake Lagoda	RU	Ongoing	Ongoing	Paper mill had an accident in December 1998.	-
15		Volkhov	Industry (Aluminum)	Lake Lagoda	RU	Ongoing	Ongoing	Information from the sixth inventory.	-
22		St. Petersburg	Industry (Metal Plating)	Gulf of Finland	RU	Ongoing	Ongoing	Information from the sixth inventory. Modernization of sludge treatment at the Central WWTP. Storage capacity for sludge from waste waters.	-
25	X	Narva	Industry (Oil Shale Power Plant)	Gulf of Finland	EE	Ongoing	Planned	Refurbishment study was completed	1997 - 2005
27		Kehra	Industry (Pulp & Paper)	Gulf of Finland	EE	Ongoing	Ongoing	Reduction of aeriation system, replacing of the collecting and discharge electrodes of the electrostatic precipitation and erection of the fired boiler. Reconstruction of the existing boiler no 4 to the boiler fired bark and sawdust.	1998 - 1999
38	X	Sloka	Industry (Pulp & Paper)	Gulf of Riga	LV	No	No	The plant is privatised and the buildings are under dismantling. The production of pulp and paper is ceased.	-
39	X	Latbiofarm	Industry (Pharmaceutical)	Gulf of Riga	LV	No	No	0	-
43		VEF Plant (Riga)	Industry (Metals)	Daugava RB	LV	No	No	Other projects are not decided due to expected privatization of Plant (info year 1994).	-
44		RER Plant (Riga)	Industry (Metals)	Daugava RB	LV	No	No	0	-
45		Riga	Industry (Various)	Daugava RB	LV	No	No	The biggest industrial plants have eliminated their production significantly	-
49	X	Sovetsk	Industry (Pulp & Paper)	Nemunas RB	RU	Completed	Ongoing	Construction is stopped due to the lack of centralised funding.	1983 - 2000
50	X	Neman	Industry (Pulp & Paper)	Nemunas RB	RU	Ongoing	No	Construction is stopped due to the lack of centralised funding. The mill has practically not been working in 1998.	1988 -2000
52		Amalg Azotaz	Industry (Fertilizer)	Nemunas RB	LT	Ongoing	No	Water pollution control	-
54		Kedainiai	Industry (Chemicals)	Nemunas RB	LT	Ongoing	No	Monitoring and environmental assessment activities ongoing	-

Site type: **Industrial**

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
56		Panevezys	Industry (Food)	Nemunas RB	LT	No	No	-	-
62		Mazeikiai	Oil Refinery / Marine Terminal	Lithuanian Coast	LT	No	No	-	-
64		Cardboard Factory	Industry (Paper)	Lithuanian Coast	LT	No	No	Factory stopped production in 1994.	-
69		Pulp & Paper No 2 (4),Kaliningrad	Industry (Pulp & Paper)	Kaliningrad	RU	Ongoing	Ongoing	Re-construction of internal sewerage system and local WWTP and connection of them to combined biological WWTP for the municipal waste-water of the city of Kaliningrad and local industries.	1983 - 2000
71		Oil Bunkering Station	Industry (Oil storage)	Kaliningrad	RU	No	No	-	-
77		Swiecie	Industry (Pulp & Paper)	Vistula	PL	Ongoing	Completed	From January 1999 the production of bleached pulp has been stopped. Investments in WWTP have been conducted to introduce secondary treatment stage for waste water discharges. From 1999 waste waters are treated on double biological and chemical stages. Monitoring programme has been established and implemented. It covers full control of contamination in waste water and emissions to the atmosphere, monitoring of contamination of ground water in the buffer zone and beyond.	1997 - 1999
81	X	Wloclawek - Anwil	Industries (Chemical)	Vistula	PL	Ongoing	Ongoing	Modernization of waste water disposal and water management	-2000
89		Jaworzno Organica Azot	Industry (Chemical)	Vistula	PL	Planned	Planned	Planned: modernization of waste water treatment technology and modernization of production line of insecticides. Completed: modernisation of production line of birlen also to eliminate use of chlorine and modernization of landfill of wastes.	1996 - 2000
90		Zgierz - Boruta Dyestuffs	Industry (Chemical)	Vistula	PL	Ongoing	Ongoing	-	1993 - 1999
91		Oswiecim - Dwory	Industry (Chemical)	Vistula	PL	Ongoing	No	Study "Enhanced program of pollutants emissions limitation" was made. There is lack of funds to make investments.	-
92		Bukowno-Boleslaw	Industry (Metals)	Vistula	PL	Ongoing	Ongoing	-	2000
96		Upper Basin (7)	Industrial (Mining)	Vistula	PL	No	No	-	2002
98	X	Szczecin - Police, Skolwin	Industry (Fert, P & P)	Oder/Odra	PL	Ongoing	Ongoing	Chmical plant ongoing:construction of band conveyor for salt transport, desulphurisation of the gases in order to reduce CO2 emissions, reuse of FeSO4. Chemical plant completed: shifting from use of powered fuel burners to low emission burners in order to reduce NOx emissons and dust emissions below 50 mg/m3, continuous monitoring of heat power plant EC-II. Chemical plant planned: automation of emission stations - new piezometer of FeSO4. Paper industry ongoing: construction of biological WWTP for municipal and industrial waste water. Paper industry: fluidal boiler construction.	Chemical plant 1992 - 2000, Paper industry 1999 - 2000
102	X	Legnica-Glogow	Industry (N-Fertilizer,Copper mining,Food)	Oder/Odra	PL	No	No	Modernization of WWTP is planned but due to lack of funds investments have not been done.	-
104		Wroclaw	Industry (Chemical,Food,Textiles)	Oder/Odra	PL	No	No	-	-
105		Ubocz - Luban	Industry (Fertilizer)	Oder/Odra	PL	No	No	Lack of funds.	-
106		Boleslawiec - Winzow	Industry (Fertilizer)	Oder/Odra	PL	Ongoing	Planned	Water pollution control	2000 -

Site type: **Industrial**

Key	Priority	Site name	Site type		Country	Technical Assistance	Investments	Description of activity	Time schedule
108	X	Katowice-West	Industry (Coke,Steel,Fertilizer)	Oder/Odra	PL	-	-	-	-
110	X	Ostrava Area	Industry (Chemical,Pulp & Paper, etc.)	Oder/Odra	CS	-	-	-	-
111		Upper Basin (7)	Industry (Mining)	Oder/Odra	CS/PL	No	No	Information from the year 1996.	2005

Site type: **Municipal**

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
17		Helsinki Region	Municipal	Gulf of Finland	FI	No	Ongoing	To ameliorate 50 % N-removal to 70 %	17
18	X	St. Petersburg	Municipal (Connection Sewers)	Gulf of Finland	RU	Ongoing	Ongoing	Full scale construction of new sewer connection.	1993 - 2004
19	X	St. Petersburg (Urban) (3)	Municipal & Industrial	Gulf of Finland	RU	Ongoing	Ongoing	Full scale construction of WWTPs. Water sector development programme.	-
20	X	St. Petersburg (Suburban)	Municipal & Industrial	Gulf of Finland	RU	Ongoing	Ongoing	-	-
21		St. Petersburg	Municipal	Gulf of Finland	RU	Ongoing	Ongoing	Feasibility studies and planning. Pilot plant study at one WWTP.	-
26		Kohtla Järve	Area Municipal & Industrial	Gulf of Finland	EE	Ongoing	Ongoing	Feasibility study, Kohtla-Järve WWTP project, evaluation of existing WWTP, WWTP reconstruction and stabilisation ponds for ash heaps drainage water are carried out. Pipeline and pumping station design for pumping ash heap drainage water to WWTP was carried out. Start-up of two post sedimentation tanks are underway.	-2002
28	X	Tallinn	Municipal & Industrial	Gulf of Finland	EE	Ongoing	Ongoing	Reconstruction of sewerage pipelines, construction of stormwater reservoir	1999 - 2001
31		Haapsalu	Municipal & Industrial	Estonian Cost	EE	Ongoing	Ongoing	Nitrogen reduction of the Haapsalu WWTP. Sludge treatment of the Haapsalu WWTP, WWTP is reconstructed.	2000 - 2003
33	X	Pärnu	Municipal & Industrial	Gulf of Riga	EE	Ongoing	Planned	Renovation of WWTP screening, grid removal, pre-sedimentation and SCADA units. Ongoing technical design of renovation of mechanical section.Under planning renovation of mechanical section.	1999 - 2000
34		Paide	Municipal & Industrial	Gulf of Riga	EE	Ongong	Ongoing	Mechanical pretreatment of waste water, chemical tratment of waste water, sludge treatment	1999 - 2001
41	X	Siauliai	Municipal & Industrial	Gulf of Riga	LT	Ongoing	Ongoing	Water Pollution Control, Air Pollution Control and Waste Management Activities	1999 - 2000
42	X	Riga (WWTP Phase II)	Municipal & Industrial	Daugava RB	LV	Ongoing	Ongoing	A large investment programme is under preparation for upgrading and expansion of the Riga sewerage system.	1996 -2000
46	X	Daugavpils	Municipal & Industrial	Daugava RB	LV	Ongoing	No	Rehabilitation of pumping stations and sewerage network, development a new well field, construction a new transmission pipeline and iron removal plant in water supply, management of municipal serv.	1996 - 2000
47		Vitebsk	Municipal & Industrial	Daugava RB	BY	Ongoing	-	Pre-feasibility study. Information from SEPA 99.	-
48	X	Liepaja (3)	Municipal & Industrial	Latvian Coast	LV	Ongoing	Completed	Warranty and regulation untill 03/1999.	-
51	X	Kaunas	Municipal & Industrial	Nemunas RB	LT	Ongoing	Ongoing	Mechanical WWTP	1991 - 1999
53		Kedainiai	Municipal & Industrial	Nemunas RB	LT	Ongoing	No	Water pollution control activities ongoing	-
55		Panevezys	Municipal & Industrial	Nemunas RB	LT	Ongoing	Planned	Policy and management support ongoing. Technical design, full scale construction and training planned	1998 - 2004
57		Marijampole	Municipal & Industrial	Nemunas RB	LT	Planned	No	N and P removal planned	-
58		Alytus	Municipal & Industrial	Nemunas RB	LT	Ongoing	Ongoing	Upgrading and extention of Alytus WWTP including biological nutrients removal. To be completed at the end of 1999.	1991 - 1999

Site type: **Municipal**

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
59	X	Vilnius / Grigiskes	Municipal & Industrial	Nemunas RB	LT	Ongoing	Ongoing	Ongoing activities are monitoring and environmental assessment, pilot plant test, policy and management support, and training.	1995 - 2001
61		Grodno	Municipal & Industrial	Nemunas RB	BY	-	-	-	-
63	X	Klaipeda	Municipal & Industrial	Lithuanian Coast	LT	Planned	No	Planned long term training programme (9 months)	-
65		Palanga	Municipal	Lithuanian Coast	LT	Ongoing	Ongoing	Full scale construction monitoring and environmental assessment ongoing and training planned. All activities are related to water pollution control.	1993 - 1999
67	X	Kaliningrad	Municipal & Industrial	Kaliningrad	RU	Ongoing	Ongoing	Construction of combined biological WWTP for the municipal waste-water of the city of Kalaininggrad and local industries for total projected capacity of 169 million m3/year.	1976 - 2000
74	X	XXXII. Koszalin - Jamno	Municipal & Industrial	Baltic Coast of Poland	PL	Ongoing	Planned	Construction for N-removal in compliance with Polish standards (N<30 mg/dm3) - completed in 1998. Boiler house construction completed in 1998. Realisation of technical project of N-removal in compliance with EU-directives. Realisation of N-removal (enlargement of WWTP) project preparation and specification in 1999 and realisation in 2000- 2002	1999 - 2002
75	X	Gdynia - Debogorze	Municipal & Industrial	Baltic Coast of Poland	PL	Completed	Completed	-	-
76	X	Gdansk - Wschod, Oil Refinery	Municipal & Industrial	Baltic Coast of Poland	PL	Completed	Ongoing	-	1999 - 2001
78	X	Bydgoszcz - Fordon	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Planned technology of waste water treatment aims at reduction of nutrients.	1991 - 2000
79		Bydgoszcz - Kapusciska	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Mechanical and biological WWTP under construction	1997 - 2000
80	X	Torun	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Enlargement of sewerage system for Torum. Composting of communal wastes. Composting of sludge.	-1999
82		Warsaw - Czajka	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Enlargement of WWTP. Nutrient removal.	1998 - 2005
83	X	Warsaw - Poludnie, Siekierki	Municipal & Industrial	Vistula	PL	Ongoing	Planned	Construction of WWTP	1992 - 2002
84		Warsaw - Pancerz	Municipal & Industrial	Vistula	PL	Completed	Planned	WWTP construction.	-
85		Lublin - Hajdow	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Modernization of WWTP in order to reduce nutrients.	1998 - 2004
86	X	Krakow - Plaszow	Municipal & Industrial	Vistula	PL	Ongoing	Planned	Water pollution control and waste management activities are ongoing.	2000 - 2004
87	X	Krakow - Kujawy, T. Sendzimir Steel Plant	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	1st stage 1991 - 1999. 2 stage 2003 - 2004 planned to reconstruct of sewage system in order to conduct waste water from other parts of the city.	1991 - 2004
88	X	Katowice -East (6)	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	-	1996 - 2002
93		Brest	Municipal & Industrial	Vistula	BY	Ongoing	No	Information from the 5th inventory. Ongoing monitoring of water and air by "Belhydromet"	2010
94	X	Lvov	Municipal & Industrial	Vistula	UA	No	No	Lack of funds.	-
97	X	Szczecin - Pomorzany	Municipal & Industrial	Oder/Odra	PL	Planned	Planned	Construction of WWTP.	1999 - 2003
99		Poznan	Municipal & Industrial	Oder/Odra	PL	Ongoing	Ongoing	Ongoing water pollution control and waste management. Planned air pollution control.	2000 -
100	X	Lodz	Municipal & Industrial	Oder/Odra	PL	Ongoing	Ongoing	Storage of sludge and further utilization of sludge. Entry chamber, crash screen and desander. Mechanical and biological treatment and sludge treatment. Under consideration is inceneration and composting.	1974 - 2002
101		Zielona Gora	Municipal & Industrial	Oder/Odra	PL	Completed	Completed	WWTP construction.	1998
103		Wroclaw	Municipal & Industrial	Oder/Odra	PL	Ongoing	Ongoing	Upgrading of WWTP	1996 - 2000
107	X	Katowice-West	Municipal & Industrial	Oder/Odra	PL	Completed	Ongoing	Installation of chemical precipitation of phosphorus.	1999 - 2000
109	X	Ostrava	Municipal & Industrial	Oder/Odra	CS	-	-	-	-
115		Neubrandenburg	Municipal & Industrial	Arkona Basin	DE	Ongoing	Completed	Substantial extention (90000 PE to 140000 PE) and modernization, building commencement 1996	1993 - 1999

Site type: **Municipal**

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
117		Stavenhagen - Malchin	Municipal & Industrial	Arkona Basin	DE	Ongoing	Completed	Substantial extention (80000 PE to 300000 PE) and modernization, building commencement 1996/1997	1991 - 1999
119		Lübeck	Municipal & Industrial	Belt Sea	DE	Ongoing	Ongoing	Plant is currently undergoing reconstruction and expancion, construction work started 1/98	1997 - 2004
120		Wismar	Municipal & Industrial	Belt Sea	DE	Ongoing	Completed	Substantial extention resp. rebuilding of plant, building commencement 1996. Training of staff.	1992 - 2001
123		Copenhagen	Municipal	The Sound	DK	Completed	Cpmpleted	Finished. Waiting for removal.	
127		Göteborg Archipelago	Municipal	Kattegat	SE	Ongong	Ongoing	-	-
130		Stockholm	Municipal	Swedish Coast	SE	Ongoing	Ongoing	-	1999

Site type: **Waste treatment**

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
6	0	Falun /Garpenberg	Waste treatment (Mining)	Bothnian Bay	SE	Ongoing	Ongong	Waste Water tratment plant, Dry cover of mine tailings	1994 - 2005
23		St. Petersburg	Hazardous Waste	Gulf of Finland	RU	Ongoing	Ongoing	Waste Management	-
70		Kaliningrad	Hazardous Waste	Kaliningrad	RU	No	No	Re-construction of internal sewerage system and local WWTP and connection of them to combined biological WWTP for the municipal waste-water of the city of Kaliningrad and local industries.	1983 - 2000

The Baltic Sea Joint Comprehensive Environmental Action Programme

Table 12. Activity at the Hot Spots and Inventory
Table on Investments

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
1		Rönnskärsverken	Industry (Metal Smelter)	Bothnian Bay	SE	Ongoing	Ongoing	Production increase to 300 000 t/y of copper from 140 000 t/y today.	1996 - 2000
6		Falun /Garpenberg	Waste treatment (Mining)	Bothnian Bay	SE	Ongoing	Ongong	Waste Water tratment plant, Dry cover of mine tailings	1994 - 2005
7		Outokumpu Group Harjavalta	Industry (Metal Smelter)	Bothnian Sea	FI	No	Ongoing	Increasing of waste water treating capasity, new electrostatic presipitator for copper smelter, improvements of bag filter. Air pollution control measures are completed.	1998 - 1999
9		Fish Farming, Åland Seas	Fish Farming	Archipelago & Åland Seas	FI	Ongoing	Ongoing	Research and development Program to decrease environmental impacts of fishing in Archipelago Sea and Åland.	-2005
10		Agriculture (2)	Agricultural Runoff	Archipelago Sea	FI	Ongoing	Ongoing	Agri-environmental programme	1995 - 1999
14		Syasstroi	Industry (Pulp & Paper)	Lake Lagoda	RU	Ongoing	Ongoing	Paper mill had an accident in December 1998.	-
15		Volkhov	Industry (Aluminum)	Lake Lagoda	RU	Ongoing	Ongoing	Information from the sixth inventory.	-
17		Helsinki Region	Municipal	Gulf of Finland	FI	No	Ongoing	To ameliorate 50 % N-removal to 70 %	1996 - 1998
18	X	St. Petersburg	Municipal (Connection Sewers)	Gulf of Finland	RU	Ongoing	Ongoing	Full scale construction of new sewer connection.	1993 - 2004
19	X	St. Petersburg (Urban) (3)	Municipal & Industrial	Gulf of Finland	RU	Ongoing	Ongoing	Full scale construction of WWTPs. Water sector development programme.	-
20	X	St. Petersburg (Suburban)	Municipal & Industrial	Gulf of Finland	RU	Ongoing	Ongoing	-	-
21		St. Petersburg	Municipal	Gulf of Finland	RU	Ongoing	Ongoing	Feasibility studies and planning. Pilot plant study at one WWTP.	-

Estimated Investment Costs in 1992 JCP, Million EUR	New Cost Estimate in 1999 Million EUR	Allocated/reserved Resources, Million EUR	Remaining TA/Investment Costs Million EUR

Key	Local	Foreign	Total	Technical Assistance	Investments	Total	Local	Foreign	Total	Local	Foreign	Total	Comments
1	45,00	0,00	45,00			45,00			45,00			0,00	1997 = 1998
6	15,00	0,00	15,00			15,00	15,00		15,00			0,00	MSEK 60 from Central or local Government and MSEK 60 from Stora Enso AB
7	12,70	0,00	12,70		4,74	4,74	4,36		4,36	0,39		0,39	Outokumpu has invested altogether MEUR 103 in environmental projects in 90's. MEUR 4,74 is additional investment for improvements.
9	na	na	na			3,00			2,41			0,59	SWFEC co-ordinates the R&D Program. Other partners: Min. of Env., Min of For. and Agr., FGRI, Fin. fishf. Union and Ålands regional government. The given figures cover only R&D costs for the year 1987 - 2000
10	55,00	0,00	55,00			35,00			-			35,00	Annually it is allocated MECU 270 (50% EU and 50% local funds) for Agri-environmental measures.
14	16,50	17,50	34,00			34,00			1,14			32,87	Allocated funds in 1995 and 1997. Local Government, administration of Syass pulp and paper mill (info from sixth inventory)
15	0,80	2,00	2,80			2,80			1,60			1,20	Allocated funds in 1995 and 1997. Local Government, administration of Volhov aluminium smelter (info from sixth inventory)
17	190,00	0,00	190,00			5,20			5,20			0,00	Information from sixth inventory. Helsinki Water Protection Coal., Vantaa, Sipoo (estimated cost and allocated resources from fifth inventory 1996)
18	116,80	32,20	149,00			540,00			80,00			460,00	MEUR 0,52 Finland. Information from SEPA 99
19	75,00	175,00	250,00			560,00			50,00			510,00	MEUR 1,9 Finland. Information from SEPA 99
20	125,10	33,90	159,00			159,00			-			159,00	Not enough information on allocated funds.
21	25,60	12,40	38,00			38,00			0,60			37,40	MEUR 0,6 Finland. Information from SEPA 99

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
22		St. Petersburg	Industry (Metal Plating)	Gulf of Finland	RU	Ongoing	Ongoing	Information from the sixth inventory. Modernization of sludge treatment at the Central WWTP. Storage capacity for sludge from waste waters.	-
23		St. Petersburg	Hazardous Waste	Gulf of Finland	RU	Ongoing	Ongoing	Waste Management	-
24	X	St. Petersburg Region	Agriculture (Large Livestock Farms)	Gulf of Finland	RU	Planned	Planned	Agricultural Demonstration projects. Vegetable production. Agriculture advisory services. Marketing improvements.	1997 - 1999
25	X	Narva	Industry (Oil Shale Power Plant)	Gulf of Finland	EE	Ongoing	Planned	Refurbishment study was completed	1997 - 2005
26		Kohtla Järve	Area Municipal & Industrial	Gulf of Finland	EE	Ongoing	Ongoing	Feasibility study, Kohtla-Järve WWTP project, evaluation of existing WWTP, WWTP reconstruction and stabilisation ponds for ash heaps drainage water are carried out. Pipeline and pumping station design for pumping ash heap drainage water to WWTP was carried out. Start-up of two post sedimentation tanks are underway.	-2002
27		Kehra	Industry (Pulp & Paper)	Gulf of Finland	EE	Ongoing	Ongoing	Reduction of aeriation system, replacing of the collecting and discharge electrodes of the electrostatic precipitation and erection of the fired boiler. Reconstruction of the existing boiler no 4 to the boiler fired bark and sawdust.	1998 - 1999
28	X	Tallinn	Municipal & Industrial	Gulf of Finland	EE	Ongoing	Ongoing	Reconstruction of sewerage pipelines, construction of stormwater reservoir	1999 - 2001
30		Gulf of Finland	Agricultural Runoff	Gulf of Finland	EE	Ongoing	No	Inventory of agricultural point-pollution sources and risks in sensitive areas of groundwater pollution. Implementation of recommendations of reductin of agricultural diffuse pollution.	-

Estimated Investment Costs in 1992 JCP, Million EUR			New Cost Estimate in 1999 Million EUR			Allocated/reserved Resources, Million EUR			Remaining TA/Investment Costs Million EUR			
Key	**Local**	**Foreign**	**Total**	**Technical Assistance**	**Investments**	**Total**	**Local**	**Foreign**	**Total**	**Local**	**Foreign**	**Total**	**Comments**
22	160,20	43,10	203,30			203,30			-			203,30	Not enough information on allocated funds.
23	77,90	70,50	148,40			1,80			1,80			0,00	Tacis, Finland, NEFCO.
24	56,30	37,00	93,30			93,30			0,55			92,75	MOE Finland, MOE Sweden, Scanlayer, Denmark (estimated cost and allocated resources from fifth inventory 1996)
25	839,30	232,10	1071,40			225,30			-			225,30	Not enough information on allocated funds. Information from the fifth inventory.
26	65,90	54,50	120,40			6,33			1,58			4,75	-
27	2,70	3,20	5,90			0,67			0,29			0,38	
28	75,80	17,80	93,60			93,60			-	75,80	17,80	93,60	
30	60,00	5,00	65,00			65,00						-	Allocated and Remaining funds together in Hot Spot 32 with Hot Spot 30, 32 and 36

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
31		Haapsalu	Municipal & Industrial	Estonian Cost	EE	Ongoing	Ongoing	Nitrogen reduction of the Haapsalu WWTP. Sludge treatment of the Haapsalu WWTP, WWTP is reconstructed.	2000 - 2003
32	X	Matsalu Bay	Coastal Lagoon / Wetland	Estonian Cost	EE	Ongoing	Ongoing	Baltic Agricultural Run-off Programme. Information, education and extention in Estonia. Agricultural Run-off Management Programme (demonstration watersheds and agri-environmental legislation and policy). Education and Extention Service on the Island of Saarenmaa. Investment loans for ecological farming in Estonia. Maatsalu Bay Environmental Management Agricultural Run-off Demonstration and Information Activities 1998 - 1999.	-
33	X	Pärnu	Municipal & Industrial	Gulf of Riga	EE	Ongoing	Planned	Renovation of WWTP screening, grid removal, pre-sedimentation and SCADA units. Ongoing technical design of renovation of mechanical section.Under planning renovation of mechanical section.	1999 - 2000
34		Paide	Municipal & Industrial	Gulf of Riga	EE	Ongong	Ongoing	Mechanical pretreatment of waste water, chemical tratment of waste water, sludge treatment	1999 - 2001
36		Gulf of Riga	Agricultural Runoff	Gulf of Riga	EE	Ongoing	No	Inventory of agricultural point-pollution sources and risks in sensitive areas of groundwater pollution. Implementation of recommendations of reduction of agricultural diffuse pollution.	-
37	X	Gulf of Riga Mgt	Coastal Lagoon / Wetland	Gulf of Riga	EE/LV	-	-	No information	-
38	X	Sloka	Industry (Pulp & Paper)	Gulf of Riga	LV	No	No	The plant is privatised and the buildings are under dismantling. The production of pulp and paper is ceased.	-
39	X	Latbiofarm	Industry (Pharmaceutical)	Gulf of Riga	LV	No	No		-

Estimated Investment Costs in 1992 JCP, Million EUR	New Cost Estimate in 1999 Million EUR	Allocated/reserved Resources, Million EUR	Remaining TA/Investment Costs Million EUR

Key	Local	Foreign	Total	Technical Assistance	Investments	Total	Local	Foreign	Total	Local	Foreign	Total	Comments
31	12,00	13,00	25,00			6,20			5,04			1,15	Finland MUSD 0,8; World Bank MUSD 1,6; Estonian Public Investment Programme MEEK 38,7 and own capital MEEK 0,95
32	25,00	5,00	30,00			30,00			1,30			198,70	Allocated and Remaining funds together with Hot Spot 30, 32 and 36
33	4,00	14,00	18,00			1,04			1,04			0,00	EU Phare
34	2,60	1,50	4,10			1,34			1,34			0,00	Keskkonnafond MEEK 2,25; AS Paide Piimakombinat MEEK 2,05
36	94,00	11,00	105,00			105,00							Allocated and Remaining funds together in Hot Spot 32 with Hot Spot 30, 32 and 36
37	15,00	5,00	20,00			20,00			-			20,00	No information on allocated funds.
38	0,00	72,00	72,00			0,00			-			0,00	Assumed that no investments needed.
39	0,00	19,00	19,00			19,00			-			19,00	Not engough information on allocated costs. Estimated costs from the year 1994.

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
40	X	Agriculture / Livestock	Agricultural Runoff	Gulf of Riga	LV	Ongoing	Completed	Demonstration fields and University Advisory Services are ongoing projects. BEAROP 1999 - 2001. Environmental Monitoring in Agriculture 1998 - 2000	-2001
41	X	Siauliai	Municipal & Industrial	Gulf of Riga	LT	Ongoing	Ongoing	Water Pollution Control, Air Pollution Control and Waste Management Activities	1999 - 2000
42	X	Riga (WWTP Phase II)	Municipal & Industrial	Daugava RB	LV	Ongoing	Ongoing	A large investment programme is under preparation for upgrading and expansion of the Riga sewerage system.	1996 -2000
43		VEF Plant (Riga)	Industry (Metals)	Daugava RB	LV	No	No	Other projects are not decided due to expected privatization of Plant (info year 1994).	-
44		RER Plant (Riga)	Industry (Metals)	Daugava RB	LV	No	No		-
45		Riga	Industry (Various)	Daugava RB	LV	No	No	The biggest industrial plants have eliminated their production significantly	-
46	X	Daugavpils	Municipal & Industrial	Daugava RB	LV	Ongoing	No	Rehabilitation of pumping stations and sewerage network, development a new well field, construction a new transmission pipeline and iron removal plant in water supply, management of municipal serv.	1996 - 2000
47		Vitebsk	Municipal & Industrial	Daugava RB	BY	Ongoing	-	Pre-feasibility study. Information from SEPA 99.	-
48	X	Liepaja (3)	Municipal & Industrial	Latvian Coast	LV	Ongoing	Completed	Warranty and regulation untill 03/1999.	-
49	X	Sovetsk	Industry (Pulp & Paper)	Nemunas RB	RU	Completed	Ongoing	Construction is stopped due to the lack of centralised funding.	1983 - 2000
50	X	Neman	Industry (Pulp & Paper)	Nemunas RB	RU	Ongoing	No	Construction is stopped due to the lack of centralised funding. The mill has practically not been working in 1998.	1988 -2000
51	X	Kaunas	Municipal & Industrial	Nemunas RB	LT	Ongoing	Ongoing	Mechanical WWTP	1991 - 1999
52		Amalg Azotaz	Industry (Fertilizer)	Nemunas RB	LT	Ongoing	No	Water pollution control	-
53		Kedainiai	Municipal & Industrial	Nemunas RB	LT	Ongoing	No	Water pollution control activities ongoing	-

Estimated Investment Costs in 1992 JCP, Million EUR	New Cost Estimate in 1999 Million EUR	Allocated/reserved Resources, Million EUR	Remaining TA/Investment Costs Million EUR

Key	Local	Foreign	Total	Technical Assistance	Investments	Total	Local	Foreign	Total	Local	Foreign	Total	Comments
40	180,00	20,00	200,00			0,42			0,01			0,41	Source of financing: Ministry of Environmental Protection and Regional Development of Latvia and Fund of Environmental Protection. Planned but not received (1999-09-21) from BEAROP for Interim Project Period for 1999.
41	15,00	10,00	25,00			38,87	18,08	14,59	32,67			6,19	WB MUSD 6,2, Sweden MUSD 4,65, Finland MUSD 2,1, Norway MUSD 1,5, Local MLs 80,67
42	12,50	50,00	62,50			38,42			19,21			9,31	EBRD, EIB, Finland, Sweden (SIDA), Switzerland, Latvian State budget, Riga city, Municipal enterprise "Riga Water"
43	tdb	tdb	tdb						-			-	No cost information available
44	tdb	tdb	tdb						-			-	No cost information available
45	tdb	tdb	tdb						-			-	No cost information available
46	7,80	31,00	38,80			11,91			7,08			4,83	NEFCO, Finland, Sweden (SIDA), Daugavpils municipality Latvian State budget (this comment is from the year 1998)
47	tdb	tdb	tdb						-			-	No information available.
48	10,00	15,00	25,00			25,00			16,14			8,86	WB, NEFCO, EU PHARE, Sweden (SIDA), Finland, Latvian State Budget, Liepaja City
49	1,00	2,50	3,50			64,10			25,60			38,50	
50	1,50	3,20	4,70			7,30			1,10			6,20	
51	50,00	35,00	85,00			50,09	24,42	25,67	50,09			0,00	Phare MUSD 7,0; Finland MUSD 1,7; SIDA MUSD 4,1; MoE MUSD 0,8; EBRD MUSD 14,8; NEFCO MUSD 3,0; Gvt of Lithuania MLt 125,1
52	0,00	35,00	35,00			35,00			-	0,00	35,00	35,00	Estimated costs from the fifth inventory.
53	3,60	2,40	6,00			6,00			-	3,60	2,40	6,00	

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
54		Kedainiai	Industry (Chemicals)	Nemunas RB	LT	Ongoing	No	Monitoring and environmental assessment activities ongoing	-
55		Panevezys	Municipal & Industrial	Nemunas RB	LT	Ongoing	Planned	Policy and management support ongoing. Technical design, full scale construction and training planned	1998 - 2004
56		Panevezys	Industry (Food)	Nemunas RB	LT	No	No	-	-
57		Marijampole	Municipal & Industrial	Nemunas RB	LT	Planned	No	N and P removal planned	-
58		Alytus	Municipal & Industrial	Nemunas RB	LT	Ongoing	Ongoing	Upgrading and extention of Alytus WWTP including biological nutrients removal. To be completed at the end of 1999.	1991 - 1999
59	X	Vilnius / Grigiskes	Municipal & Industrial	Nemunas RB	LT	Ongoing	Ongoing	Ongoing activities are monitoring and environmental assessment, pilot plant test, policy and management support, and training.	1995 - 2001
60	X	Agriculture / Livestock	Agricultural Runoff	Nemunas RB	LT	-	-	-	-
61		Grodno	Municipal & Industrial	Nemunas RB	BY	-	-	-	-
62		Mazeikiai	Oil Refinery / Marine Terminal	Lithuanian Coast	LT	No	No	-	-
63	X	Klaipeda	Municipal & Industrial	Lithuanian Coast	LT	Planned	No	Planned long term training programme (9 months)	-
64		Cardboard Factory	Industry (Paper)	Lithuanian Coast	LT	No	No	Factory stopped production in 1994.	-
65		Palanga	Municipal	Lithuanian Coast	LT	Ongoing	Ongoing	Full scale construction monitoring and environmental assessment ongoing and training planned. All activities are related to water pollution control.	1993 - 1999
66	X	Kursiu Lagoon	Coastal Lagoon / Wetland	Lith/Kal Coast	LT/RU	-	-	-	-
67	X	Kaliningrad	Municipal & Industrial	Kaliningrad	RU	Ongoing	Ongoing	Construction of combined biological WWTP for the municipal waste-water of the city of Kalainingrad and local industries for total projected capacity of 169 million m3/year.	1976 - 2000

Estimated Investment Costs in 1992 JCP, Million EUR			New Cost Estimate in 1999 Million EUR			Allocated/reserved Resources, Million EUR			Remaining TA/Investment Costs Million EUR			
Key	**Local**	**Foreign**	**Total**	**Technical Assistance**	**Investments**	**Total**	**Local**	**Foreign**	**Total**	**Local**	**Foreign**	**Total**	**Comments**
54	tdb	tdb	tdb						-			-	No cost information available
55	3,60	2,40	6,00			21,06			9,02			12,04	Phare MLt 14,05 and EIB MLt 28,2
56			-			0,17			0,17			0,00	Cost estimate from the sixth inventory. MOE Denmark MECU 0,17.
57	15,00	10,00	25,00			25,00			-	15,00	10,00	25,00	
58	8,00	5,00	13,00	0,52	7,33	7,85			6,15			1,70	Danish Environmental Protection Agency and local Lithuanian financing.
59	24,00	21,00	45,00	1,38	14,08	15,46			4,41			11,05	Danish EPA, Phare, Danish Bank unibank A/S and local Lithuanian financing.
60	180,00	20,00	200,00			200,00			-			200,00	Not enough information.
61	tdb	tdb	tdb						-			-	Not enough information.
62	tdb	tdb	tdb						-			-	Not enough information.
63	16,00	11,00	27,00	2,15	14,10	16,25			16,25			0,00	World Bank and local Lithuanian funancing.
64	11,00	19,00	30,00			30,00			-			30,00	
65	tdb	tdb	tdb			6,11			1,50			4,61	
66	20,00	10,00	30,00			30,00			-			30,00	Not enough information.
67	30,00	20,00	50,00			218,00			2,49			215,51	EBRD and Treasury of Russia

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
69		Pulp & Paper No 2 (4),Kaliningrad	Industry (Pulp & Paper)	Kaliningrad	RU	Ongoing	Ongoing	Re-construction of internal sewerage system and local WWTP and connection of them to combined biological WWTP for the municipal waste-water of the city of Kaliningrad and local industries.	1983 - 2000
70		Kaliningrad	Hazardous Waste	Kaliningrad	RU	No	No	Landfilling ongoing	-
71		Oil Bunkering Station	Industry (Oil storage)	Kaliningrad	RU	No	No	-	-
72		Agriculture / Livestock	Agricultural Runoff	Kaliningrad	RU	Ongoing	Ongoing	-	1995 - 2000
73	X	Vistula Lagoon	Coastal Lagoon / Wetland	Kal/Pol Coast	RU/PL	No	Completed	Coastal Zone Management Plan for the Vistula Lagoon has been finnished.	-
74	X	XXXII. Koszalin - Jamno	Municipal & Industrial	Baltic Coast of Poland	PL	Ongoing	Planned	Construction for N-removal in compliance with Polish standards (N<30 mg/dm3) - completed in 1998. Boiler house construction completed in 1998. Realisation of technical project of N-removal in compliance with EU-directives. Realisation of N-removal (enlargement of WWTP) project preparation and specification in 1999 and realisation in 2000- 2002	1999 - 2002
75	X	Gdynia - Debogorze	Municipal & Industrial	Baltic Coast of Poland	PL	Completed	Completed	-	-
76	X	Gdansk - Wschod, Oil Refinery	Municipal & Industrial	Baltic Coast of Poland	PL	Completed	Ongoing	-	1999 - 2001

Estimated Investment Costs in 1992 JCP, Million EUR	New Cost Estimate in 1999 Million EUR	Allocated/reserved Resources, Million EUR	Remaining TA/Investment Costs Million EUR

Key	Local	Foreign	Total	Technical Assistance	Investments	Total	Local	Foreign	Total	Local	Foreign	Total	Comments
69	30,00	152,00	182,00			1,37			0,92			0,45	
70	7,50	5,00	12,50			12,50			-			12,50	
71	tdb	tdb	tdb						-			-	Not enough information.
72	35,00	5,00	40,00			6,00			0,20			5,80	
73	15,00	5,00	20,00	0,03	1,87	1,90	0,60	1,30	1,90			0,00	Cost information from the year 1998 inventory.
74	32,00	12,20	44,20	0,01	0,11	0,12	0,12		0,12			0,00	Cost information from the year 1998 inventory.
75	4,00	17,00	21,00			8,65	7,34	1,31	8,65			0,00	Cost information from the year 1998 inventory.
76	88,00	41,00	129,00			92,15			58,03	27,12	7,00	34,12	BIG Bank Gdansk - MPLN 51,5, National Fund for Environmental Protection and Water Management MPLN 53,5, Provincial Fund for Environmantal Protection and Water Mangement MPLN 8,,5

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
77		Swiecie	Industry (Pulp & Paper)	Vistula	PL	Ongoing	Completed	From January 1999 the production of bleached pulp has been stopped. Investments in WWTP have been conducted to introduce secondary treatment stage for waste water discharges. From 1999 waste waters are treated on double biological and chemical stages. Monitoring programme has been established and implemented. It covers full control of contamination in waste water and emissions to the atmosphere, monitoring of contamination of ground water in the buffer zone and beyond.	1997 - 1999
78	X	Bydgoszcz - Fordon	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Planned technology of waste water treatment aims at reduction of nutrients.	1991 - 2000
79		Bydgoszcz - Kapusciska	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Mechanical and biological WWTP under construction	1997 - 2000
80	X	Torun	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Enlargement of sewerage system for Torum. Composting of communal wastes. Composting of sludge.	-1999
81	X	Wloclawek - Anwil	Industries (Chemical)	Vistula	PL	Ongoing	Ongoing	Modernization of waste water disposal and water management	-2000
82		Warsaw - Czajka	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Enlargement of WWTP. Nutrient removal.	1998 - 2005
83	X	Warsaw - Poludnie, Siekierki	Municipal & Industrial	Vistula	PL	Ongoing	Planned	Construction of WWTP	1992 - 2002
84		Warsaw - Pancerz	Municipal & Industrial	Vistula	PL	Completed	Planned	WWTP construction.	-

Estimated Investment Costs in 1992 JCP, Million EUR	New Cost Estimate in 1999 Million EUR	Allocated/reserved Resources, Million EUR	Remaining TA/Investment Costs Million EUR

Key	Local	Foreign	Total	Technical Assistance	Investments	Total	Local	Foreign	Total	Local	Foreign	Total	Comments
77	7,30	5,70	13,00			4,08			3,40			0,68	
78	28,10	14,60	42,70			16,53			15,98			0,54	National Fund for Environmental Protection and Water Management and own capital.
79	53,00	22,00	75,00			45,30			6,37			38,93	MPLN 80 National Fund for Environmental Protection and Water Management. MPLN 16 Provincial Fund for Environmental Protection and Water Mangement. Other allocated foreign funds MPLN 25. Own capital MPLN 51. Local Eco Fund MPLN 16,6.
80	67,30	27,70	95,00			27,84			27,82			0,00	MPLN 45 Environmantal Protection Bank. MPLN 3,6 Natinal Fund for Environmental Protection and Water Management. MPLN 5,0 Provincial Fund for Environmental Protection and Water Management. MPLN 38,5 National Budget. MPLN 24 City Budget.
81	20,10	11,40	31,50			14,54			14,54			0,00	MPLN 32,6 Own Capital. MPLN 25,6 credit from National Fund for Environmental Protection and Water Management.
82	55,00	21,00	76,00			0,00			0,00			0,00	No allocation figures given for 1998.
83	83,00	36,00	119,00			116,80			116,80			0,00	MEUR 45 European Investment Bank. MEUR 48,3 National Fund for Environmental Protection and Water Mangement. Own Capital MEUR 23,5.
84	157,00	75,00	232,00			331,02			0,06			330,96	Cost estimate from the year 1997.

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
85		Lublin - Hajdow	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	Modernization of WWTP in order to reduce nutrients.	1998 - 2004
86	X	Krakow - Plaszow	Municipal & Industrial	Vistula	PL	Ongoing	Planned	Water pollution control and waste management activities are ongoing.	2000 - 2004
87	X	Krakow - Kujawy, T. Sendzimir Steel Plant	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	1st stage 1991 - 1999. 2 stage 2003 - 2004 planned to reconstruct of sewage system in order to conduct waste water from other parts of the city.	1991 - 2004
88	X	Katowice -East (6)	Municipal & Industrial	Vistula	PL	Ongoing	Ongoing	-	1996 - 2002
89		Jaworzno Organica Azot	Industry (Chemical)	Vistula	PL	Planned	Planned	Planned: modernization of waste water treatment technology and modernization of production line of insecticides. Completed: modernisation of production line of birlen also to eliminate use of chlorine and modernization of landfill of wastes.	1996 - 2000
90		Zgierz - Boruta Dyestuffs	Industry (Chemical)	Vistula	PL	Ongoing	Ongoing	-	1993 - 1999
91		Oswiecim - Dwory	Industry (Chemical)	Vistula	PL	Ongoing	No	Study "Enhanced program of pollutants emissions limitation" was made. There is lack of funds to make investments.	-
92		Bukowno-Boleslaw	Industry (Metals)	Vistula	PL	Ongoing	Ongoing	-	2000
93		Brest	Municipal & Industrial	Vistula	BY	Ongoing	No	Information from the 5th inventory. Ongoing monitoring of water and air by "Belhydromet"	2010
94	X	Lvov	Municipal & Industrial	Vistula	UA	No	No	Lack of funds.	-

Estimated Investment Costs in 1992 JCP, Million EUR			New Cost Estimate in 1999 Million EUR			Allocated/reserved Resources, Million EUR			Remaining TA/Investment Costs Million EUR			
Key	**Local**	**Foreign**	**Total**	**Technical Assistance**	**Investments**	**Total**	**Local**	**Foreign**	**Total**	**Local**	**Foreign**	**Total**	**Comments**
85	11,00	7,00	18,00			10,22			0,54			9,68	MDKK 8,7 Danish Agency for Environmental Protection. MPLN 0,49 Polish subvention from municipal resources.
86	63,00	32,00	95,00			54,09			0,00			54,09	MPLN 185 ISPA. MPLN 70 National Fund for Environmental Protection and Water Management. MPLN 66 Own capital.
87	69,00	31,00	100,00			36,56			0,00			36,56	MPLN 42 National Fund for Environmental Protection and Water Management. MPLN 60 Provincial fund for Environmental Protection and Water Management. MPLN 19,5 communal Fund for Environmental Protection and Water Mangement. MPLN 38 Own capital.
88	103,00	50,00	153,00			153,00			0,00			153,00	All the information from the previous inventories. No information given in 1999.
89	1,10	0,60	1,70			0,82			0,62			0,20	MPLN 1,55 Own capital.
90	2,10	1,40	3,50			18,03			16,83			1,20	All the information form the year 1998, no information given in 1999. National Fund for Environmental Protection and Water Management, Voivodship Fund for Envir. Protection, Municipal Fund for Env. Protection, Central Government, City funds, ZPB "Boruta"
91	9,90	6,60	16,50			0,00			0,00			0,00	
92	4,20	2,80	7,00	0,10	3,20	3,30			0,00			3,30	Estimated costs from the fifth inventory 1996. No information in 1999.
93	20,00	11,00	31,00			8,33			-			8,33	Information from the 5th inventory. Propable source of financing state and local budget, Nature Preserve Fund
94	133,00	81,00	214,00			214,00			4,00			210,00	Information from the year 1994. State budget.

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
95	X	Agriculture / Livestock	Agricultural Runoff	Vistula	PL	-	-	-	-
96		Upper Basin (7)	Industrial (Mining)	Vistula	PL	No	No	-	2002
97	X	Szczecin - Pomorzany	Municipal & Industrial	Oder/Odra	PL	Planned	Planned	Construction of WWTP.	1999 - 2003
98	X	Szczecin - Police, Skolwin	Industry (Fert, P & P)	Oder/Odra	PL	Ongoing	Ongoing	Chmical plant ongoing:construction of band conveyor for salt transport, desulphurisation of the gases in order to reduce CO_2 emissions, reuse of $FeSO_4$. Chemical plant completed: shifting from use of powered fuel burners to low emission burners in order to reduce NOx emissons and dust emissions below 50 mg/m3, continuous monitoring of heat power plant EC-II. Chemical plant planned: automation of emission stations - new piezometer of $FeSO_4$. Paper industry ongoing: construction of biological WWTP for municipal and industrial waste water. Paper industry: fluidal boiler construction.	Chemical plant 1992 - 2000, Paper industry 1999 - 2000
99		Poznan	Municipal & Industrial	Oder/Odra	PL	Ongoing	Ongoing	Ongoing water pollution control and waste management. Planned air pollution control.	2000 -
100	X	Lodz	Municipal & Industrial	Oder/Odra	PL	Ongoing	Ongoing	Storage of sludge and further utilization of sludge. Entry chamber, crash screen and desander. Mechanical and biological treatment and sludge treatment. Under consideration is inceneration and composting.	1974 - 2002

Estimated Investment Costs in 1992 JCP, Million EUR	New Cost Estimate in 1999 Million EUR	Allocated/reserved Resources, Million EUR	Remaining TA/Investment Costs Million EUR

Key	Local	Foreign	Total	Technical Assistance	Investments	Total	Local	Foreign	Total	Local	Foreign	Total	Comments
95	150,00	1150,00	1300,00			1300,00						1300,00	No information in 1999.
96	tdb	tdb	tdb			0,29			0,00			0,29	No information in 1999.
97	66,90	16,70	83,60			42,50			5,51			36,99	Source of financing and allocated funds from the 7th inventory. Phare.
98	10,90	2,70	13,60			2,10			0,02			2,08	Planned MPLN 0,7 foreign funds. Planned MPLN 4,5 National Fund for Environmental Protection and Water Management and Provincial Fund for Environment. Own capital MPLN 2,8.
99	103,00	25,80	128,80			85,22			85,22			0,00	MPLN 6,0 Foreign funds. Foreign loans MPLN 110,5. Local funds MPLN 63,0. MPLN 107,8 Promoter/Central gvt. Own capital MPLN 45,5. MPLN 5,2 Communal Fund for Environmental Protection. MPLN 1,4 National Fund for Environmental Protection and Water Mangement. MPLN 1,5 Finnish eco-conversion.
100	162,30	40,60	202,90			82,34			52,72			29,62	MPLN 50,2 National Fund for Environmental Protection and Water Mangement. MPLN 4,0 Provincial Fund for Environmental Protection and Water Mangement. MPLN 5,0 Environmental Protection Bank. MPLN 89,0 City Bank. MPLN 105,7 National Budget.

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
101		Zielona Gora	Municipal & Industrial	Oder/Odra	PL	Completed	Completed	WWTP construction.	1998
102	X	Legnica-Glogow	Industry (N-Fertilizer,Copper mining,Food)	Oder/Odra	PL	No	No	Modernization of WWTP is planned but due to lack of funds investments have not been done.	-
103		Wroclaw	Municipal & Industrial	Oder/Odra	PL	Ongoing	Ongoing	Upgrading of WWTP	1996 - 2000
104		Wroclaw	Industry (Chemical,Food,Textiles)	Oder/Odra	PL	No	No	-	-
105		Ubocz - Luban	Industry (Fertilizer)	Oder/Odra	PL	No	No	Lack of funds.	-
106		Boleslawiec - Winzow	Industry (Fertilizer)	Oder/Odra	PL	Ongoing	Planned	Water pollution control	2000 -
107	X	Katowice-West	Municipal & Industrial	Oder/Odra	PL	Completed	Ongoing	Installation of chemical precipitation of phosphorus.	1999 - 2000
108	X	Katowice-West	Industry (Coke,Steel,Fertilizer)	Oder/Odra	PL	-	-	-	-
109	X	Ostrava	Municipal & Industrial	Oder/Odra	CS	-	-	-	-
110	X	Ostrava Area	Industry (Chemical,Pulp & Paper, etc.)	Oder/Odra	CS	-	-	-	-
111		Upper Basin (7)	Industry (Mining)	Oder/Odra	CS/PL	No	No	Information from the year 1996.	2005
112	X	Agriculture / Livestock	Agricultural Runoff	Oder/Odra	PL	Ongoing	No	Information from the 5th inventory.	-

Estimated Investment Costs in 1992 JCP, Million EUR			New Cost Estimate in 1999 Million EUR			Allocated/reserved Resources, Million EUR			Remaining TA/Investment Costs Million EUR			
Key	**Local**	**Foreign**	**Total**	**Technical Assistance**	**Investments**	**Total**	**Local**	**Foreign**	**Total**	**Local**	**Foreign**	**Total**	**Comments**
101	31,00	7,80	38,80			18,67			12,86			5,81	Cost figures from the 6th inventory. Phare, National Fund for Environmental Protection and Water Management, Regional Fund for Environmental Protection and Water Management, City of Zielona Gora, Danish Agency of Environmental Protection, Foundation of Polish-German Cooperation
102	64,00	44,00	108,00			0,00			0,00			0,00	
103	119,80	29,90	149,70			39,00			39,00			0,00	MEUR 3 Foreign grant. MEUR 11,9 foreign loans. MECU 1,02 Province Office of Low Silesia. MECU 12,17 National Budget. MECU 6,71 Municipal Enterprice for Water Supply and Sewerage Systems
104	15,70	3,90	19,60			19,60			0,00			19,60	-
105	0,60	0,20	0,80			0,00			0,00			0,00	-
106	0,60	0,20	0,80			0,50			0,01			0,49	-
107	155,60	38,90	194,50			0,04			0,04			0,00	MPLN 0,15 Local financing.
108	7,00	1,80	8,80			8,80			-			8,00	No information available.
109	62,90	15,70	78,60			78,60			-			78,60	No information available.
110	28,00	7,00	35,00			35,00			-			35,00	No information available.
111	tdb	tdb	tdb						-			-	No information available.
112	450,00	50,00	500,00			500,00			-			500,00	No cost information available.

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
113	X	Odra Lagoon mgt	Coastal Lagoon / Wetland	Oder/Odra	PL/DE	Ongoing	Ongoing	Construction of biological WWTP with a new sewage disposal system. Gasification of Miedzyzdroje. Reclamation of storage yard.	1998 - 2001
115		Neubrandenburg	Municipal & Industrial	Arkona Basin	DE	Ongoing	Completed	Substantial extention (90000 PE to 140000 PE) and modernization, building commencement 1996	1993 - 1999
117		Stavenhagen - Malchin	Municipal & Industrial	Arkona Basin	DE	Ongoing	Completed	Substantial extention (80000 PE to 300000 PE) and modernization, building commencement 1996/1997	1991 - 1999
118		Agriculture	Agricultural Runoff	Arkona Basin	DE	Ongoing	Ongoing	Information from the 6th inventory. Monitoring programme, management of fen land soil.	-
119		Lübeck	Municipal & Industrial	Belt Sea	DE	Ongoing	Ongoing	Plant is currently undergoing reconstruction and expancion, construction work started 1/98	1997 - 2004
120		Wismar	Municipal & Industrial	Belt Sea	DE	Ongoing	Completed	Substantial extention resp. rebuilding of plant, building commencement 1996. Training of staff.	1992 - 2001
122		Agriculture (8)	Agricultural Runoff	Belt Sea	DK	No	Ongong	Information from the year 1994. The Action Plan on the Aquatic Environment II of February 1998	2000
123		Copenhagen	Municipal	The Sound	DK	Completed	Cpmpleted	Finished. Waiting for removal.	
124		Agriculture (8)	Agricultural Runoff	The Sound	DK	No	Ongoing	Information from the 6th inventory. The Action Plan on the Aquatic Environment II of February 1998	1992 - 2001
125		The Swedish Sound	Agricultural Runoff	The Sound	SE	Ongoing	Ongong	-	-
127		Göteborg Archipelago	Municipal	Kattegat	SE	Ongong	Ongoing	-	-
128		Laholm Area	Agricultural Runoff	Kattegat	SE	Ongoing	Ongoing	-	-

Estimated Investment Costs in 1992 JCP, Million EUR	New Cost Estimate in 1999 Million EUR	Allocated/reserved Resources, Million EUR	Remaining TA/Investment Costs Million EUR

Key	Local	Foreign	Total	Technical Assistance	Investments	Total	Local	Foreign	Total	Local	Foreign	Total	Comments
113	15,00	5,00	20,00	2,00	26,60	28,60	14,17	14,43	28,60			0,00	Cost information from the 6th inventory. Ecofund, Danish EPA, Cooperation Fund (USA), Phare, Provincial Fund for Env. Prot. and W. M., National Fund for Env. Prot. and W. M., Polish-German Co-operation Fund, Agency for Restructurization and Modernization of Agriculture
115	40,00	0,00	40,00	2,79	25,40	27,94	27,94		27,94			0,00	Central or regional government and own capital.
117	25,00	0,00	25,00	3,05	27,44	30,48	30,48		30,48			0,00	Central or regional government and own capital.
118	tdb	tdb	tdb						-			-	No information available. Private, Land Mecklenburg-Vorpommern
119	60,00	0,00	60,00	3,00	71,00	74,00	2,00		2,00			72,00	Federal Government of Schlesswig-Hollstein.
120	50,00	0,00	50,00	3,30	29,72	33,02	0,03		0,03			32,99	Central or regional government and own capital
122	40,00	0,00	40,00			40,00			-			40,00	No cost information availble.
123	212,50	0,00	212,50			240,00			240,00			0,00	Information form SNV 99.
124	20,00	0,00	20,00			20,00			-			20,00	No cost information available.
125	10,00	0,00	10,00			10,00						10,00	County Board , The local farmer support EU directive 2078 EEC (estimated costs from fifth inventory 1996)
127	50,00	0,00	50,00	3,50	39,70	43,20		43,20	43,20			0,00	EIB, NIB (Information not changed from year 1996)
128	10,00	0,00	10,00			10,00						10,00	County Board , The local farmer support EU directive 2078 EEC (estimated costs from fifth inventory 1996)

Key	Priority	Site name	Site type	Receiving water body	Country	Technical Assistance	Investments	Description of activity	Time schedule
129		Agriculture (8)	Agricultural Runoff	Kattegat	DK	No	Ongoing	Information from the 6th inventory.The Action Plan on the Aquatic Environment II of February 1998	-
130		Stockholm	Municipal	Swedish Coast	SE	Ongoing	Ongoing	-	1999
132		Kristianstad Area	Agricultural Runoff	Bornholm Basin	SE	Ongoing	Ongoing	-	-

The used rates of exchange are from the European Commission monthly published rates of exchange of August 1998. (Such rates are published in the Supplement to the European Communities Official Journal after the 10th of each month)

Sweden (crown)	1 ECU =	8,80584	SEK
Finland (mark)	1 ECU =	5,98349	FIM
Russia (ruble)	1 ECU =	6,85770	RUB
Estonia (crown)	1 ECU =	15,7982	EEK
Latvia (lats)	1 ECU =	0,66798	LVL
Lithuania (litas)	1 ECU =	4,46064	LTL
Poland (zloty)	1 ECU =	3,81439	PLN
Germany (mark)	1 ECU =	1,96825	DEM
Danmark (crown)	1 ECU =	7,50144	DKR

Estimated Investment Costs in 1992 JCP, Million EUR			New Cost Estimate in 1999 Million EUR			Allocated/reserved Resources, Million EUR			Remaining TA/Investment Costs Million EUR			
Key	**Local**	**Foreign**	**Total**	**Technical Assistance**	**Investments**	**Total**	**Local**	**Foreign**	**Total**	**Local**	**Foreign**	**Total**	**Comments**
129	40,00	0,00	40,00			40,00			-			40,00	No cost information available.
130	250,00	0,00	250,00	25,00	182,00	196,00	166,00	41,00	207,00	-141,00	141,00	0,00	EIB, NIB, Grants from the SW EPA, Tariffs, Banks (Information not changed from year 1996)
132	5,00	0,00	5,00			5,00			-			5,00	Information from the 6th inventory. County Board , The local farmer support EU directive 2078 EEC.
	6111,60	3313,40	9425,00			7348,66			1461,55			5887,39	

SEPA 99 Swedish Environmental Protection Agency, Lead party report on Combined Municipal and Industrial Discharges, Baltic Sea Joint Comprehensive Environmental Action Programme, 1999.

SNV 99 Naturvårdsverket: Skogsindustrins utsläpp till vatten och luft samt avfallsmängder och energiförbrukning 1998 (Forest industry emissions to water and air 1998), August 1999.

LIST OF ABBREVIATIONS
(used in Annex 1)

BITS	Swedish Agency for International Technical and Economic Cooperation
DEPA 94	Danish Environmental Protection Agency and KCCV, Hot Spot Review - Vol 1, Executive Summary. Baltic Sea Environmental Programme, Nov. 1994
EBRD	European Bank for Reconstruction and Development
ECU	European Currency Unit
EIB	European Investment Bank
EPA	Environment Protection Agency
EU	European Union
EUCC	European Union for Coastal Conservation
EU-PHARE	Program for Aid for Central and Eastern Europe
EU-LIFE	Financial Instrument to Support Community Environmental Policy
JCP	Baltic Sea Joint Comprehensive Environmental Action Programme
JTI	Swedish Institute of Agricultural Engineering
LUA	Latvian University of Agriculture
MoE	Ministry of Environment
NEFCO	Nordic Environment Finance Corporation
NIB	Nordic Investment Bank
PITF	HELCOM Programme Implementation Task Force
SIDA	Swedish International Development Agency
SLU	Swedish University of Agricultural Sciences
SWC	Stockholm Water Company
TA	Technical Assistance
tbd	to be determined
WB	World Bank
WWF	World Wide Fund for Nature
WWTP	Waste Water Treatment Plant

HELSINKI COMMISSION - BALTIC MARINE ENVIRONMENT PROTECTION COMMISSION

Annex 3

HELCOM Programme Implementation Task Force (HELCOM PITF)

21 May 1999

HELCOM PROGRAMME IMPLEMENTATION TASK FORCE (HELCOM PITF)

CRITERIA FOR INCLUSION AND DELETION OF HOT SPOTS:

PROCEDURES AND GUIDELINES FOR INCLUSION AND DELETION OF HOT SPOTS

Introduction

Overview

This document is advisory in nature and has been prepared by the Helsinki Commission (HELCOM) Programme Implementation Task Force (PITF) to provide to the co-operating countries with criteria, in the form of procedures and guidelines, to be used when they wish to propose to the PITF that a hot spot be included or deleted from the list in the Baltic Sea Joint Comprehensive Environmental Action Programme (JCP). The JCP, issued in 1992 and updated in 1998, provides a framework for implementation of preventive and curative measures for the "restoration of the ecological balance" of the Baltic Sea. The strategy of the JCP is to reduce pollution loads entering the coastal and marine environment by undertaking a phased series of complementary actions throughout the entire drainage basin of the Baltic Sea. This long-term series of interventions is intended to reduce the cumulative pollution loads from existing point and non-point sources, promote measures to avoid creation of new sources of pollution, and support measures to maintain and restore the integrity of coastal lagoons and wetland ecosystems. The update issued in 1998 reviewed progress in Programme implementation and identified a limited number of emerging issues that will require action.

Inclusion and Deletion of Hot Spots

A major focus of the JCP is to support measures to bring about a decisive reduction of pollution to the Baltic Sea from land-based sources. This is consistent with the provisions of the Helsinki Convention which mandate the Contracting Parties to: "…take all appropriate legislative, administrative or other relevant measures to prevent and eliminate pollution in order to promote the ecological restoration of the Baltic Sea Area and the preservation of its ecological balance." The list of hot spots included in the JCP provides the basis for both investment and management activities under the Programme. During the course of JCP implementation, it has been recognised that it is appropriate to:

(i) include, in a very limited number of cases, new hot spots due to new information made available since the preparation of the JCP;

(ii) consider the deletion of selected individual hot spots when well justified and consistent with the objectives of the JCP; and

(iii) divide existing large hot spots, of all types, to make them more manageable and operational when consistent with the objectives of the JCP.

Costs for addressing environmental management and protection expenditures for new investments which are inconsistent with the provisions of the Helsinki Convention due to inadequate planning

and/or inappropriate permitting decisions should be the full responsibility of the investor, consistent with the polluter pays principle.

These guidelines, prepared in three parts, provide criteria and procedures for inclusion and deletion of:

(i) point source municipal and industrial hot spots;
(ii) non-point source agricultural hot spots; and
(iii) coastal lagoon and wetland hot spots, which include selected coastal areas.

PART I Municipal and Industrial Point Source Hot Spots

1.1 Procedure for Including New Municipal and Industrial Point Source Hot Spots

General procedures for including new municipal and industrial point source hot spots are outlined in Table 1. Steps 1 and 2 are considered to be of primary importance. More specific considerations for inclusion of municipal and industrial hot spots are provided in sections 1.2.1 and 1.2.2 on Source-specific Considerations.

Table 1. General Procedures for Including New Municipal and Industrial Hot Spots

Step 1 **Quantify the site's threat and impact on the Baltic Sea**	Considerations: (i) High and/or significant amounts of polluting substances are released via rivers or directly from the site to the Baltic Sea marine and coastal waters including wetlands, lagoons and semi-enclosed basins; or (ii) The emissions contribute considerably to an impact or threaten Baltic Sea marine and coastal ecosystems, including wetlands, lagoons and semi-enclosed basins. In assessing the threat and impact, special attention should be given to: * Specially protected and other vulnerable areas, including spawning and nursery grounds (the aim is to protect these areas); * Highly polluted areas (the aim is to improve the quality of these areas); and * Highly polluted rivers (the aim is to identify the main sources of pollution and to reduce it).
Step 2 **Check the compliance of the site with Annexes of the Helsinki Convention, relevant HELCOM Recommendations and other relevant international agreements**	Considerations: The site is significantly out of compliance with Annexes of the Helsinki Convention and relevant HELCOM Recommendations, or other international agreements relevant to countries in the Baltic Sea catchment area, if HELCOM Recommendations are not available and/or applicable.
Step 3 **Develop an initial analysis of the specific site and source(s) to be addressed, remediation costs, and clean-up goals**	Considerations: The pollution problem can be reduced by specified technical measures, in an outlined time frame and with specified reduction goals, by taking cost-effective approaches with regard to the impact on the Baltic Sea marine and coastal ecosystem, including semi-enclosed basins. Also, the site can be clearly defined with regard to the geographical area of the site and source(s) to be addressed.

1.2 Source-specific Considerations for Inclusion of Municipal and Industrial Hot Spots

These source-specific considerations are meant to follow the general procedures outlined in Section 1.1.

1.2.1 Considerations for Inclusion of Municipal Hot Spots

The municipal system is found to exhibit one or more of the following characteristics:

(i) the system discharges high and/or significant amounts of phosphorus, nitrogen and organic matter and/or the wastewater treatment plant continuously discharges high amounts of chlorinated compounds due to the application of chlorine for disinfection of wastewater;

(ii) the municipal wastewater collection and treatment system includes high and/or significant industrial loading of hazardous substances which are not efficiently treated within the wastewater treatment plant and/or affect the efficiency of the treatment process;

(iii) the municipal discharge significantly affects recreational use, coastal fish spawning and nursing grounds, other marine species and the use of fish for consumption by discharging oil, hazardous substances and/or bacteria;

(iv) a leaking sewer network or overflow of the wastewater treatment plant results in high and/or significant discharges of phosphorous, nitrogen and/or hazardous substances; and/or

(v) municipal sludge handling and disposal is done in a way that results in high and/or significant discharges of phosphorous, nitrogen and/or hazardous substances.

1.2.2 Considerations for Inclusion of Industrial Hot Spots

The industrial site is found to exhibit one or more of the following characteristics:

(i) the individual facility or a complex of facilities discharges to the air or water high and/or significant amounts of hazardous substances, phosphorus, nitrogen and/or organic matter;

(ii) the individual facility or a complex of facilities discharges high and/or significant amounts of salts;

(iii) the discharges and/or emissions from the facility, in the form of oil, hazardous substances, turbidity and siltation and/or thermal effects; significantly affect recreational use, coastal fish spawning and nursing grounds, other marine species or the use of fish for consumption;

(iv) a leaking sewer network or overflow of the industrial wastewater treatment plant results in high and/or significant discharges of phosphorous, nitrogen and/or hazardous substances;

(v) soil contamination at the facility results in high and/or significant discharges of phosphorous, nitrogen and/or hazardous substances; and/or

(vi) industrial sludge handling and disposal is done in a way that results in high and/or significant discharges of phosphorous, nitrogen and/or hazardous substances.

1.3 Procedures for Deleting Municipal and Industrial Point Source Hot Spots

Standardisation of the deletion process for municipal and industrial hot spots is also useful as a way to help prioritise and implement hot spot remediation efforts. The aim should be to develop high, yet attainable, goals for countries to meet in order to remove hot spots from the list.

Countries may subdivide major municipal, industrial and agricultural hot spots to make them more manageable and operational when consistent with the objectives of the JCP.

General procedures for deleting hot spots are outlined in Table 2. More specific considerations for municipal and industrial hot spot deletions are included in sections 1.4.1 and 1.4.2 - Source-specific Considerations.

Table 2. General Procedures for Municipal and Industrial Hot Spot Deletion

Step 1	Considerations:
Quantify pollutant loadings and downstream water quality	The site is no longer the source of high and/or significant amounts of polluting substances via rivers or directly from the site to Baltic Sea marine and coastal waters, including wetlands, lagoons and semi-enclosed basins.
Step 2	Considerations:
Compare monitoring results against relevant HELCOM Recommendations and Annexes or other relevant international agreements	The site is consistent with Annexes of the Helsinki Convention, and relevant HELCOM Recommendations, or other international agreements relevant to countries in the Baltic Sea catchment area, if HELCOM Recommendations are not available and/or applicable.
Step 3	Considerations:
Assess site clean-up effects and monitoring programmes	Site clean-up efforts have attained planned objectives, pollution load reductions have been achieved, and an appropriate monitoring programme has been established.

The implementation of BAT and/or BEP may, on a site-specific basis, be considered a sufficient reason for deletion of a hot spot.

Hot spots that have ceased activity are generally covered by the criteria presented in Step 1. The situation should be analysed further before deletion of the hot spot in cases where more releases of pollutants are a possibility, such as in the case of some types of closed industrial sites and mining areas.

1.4 Source-specific Considerations for Deletion of Municipal and Industrial Point Source Hot Spots

These source-specific considerations are meant to follow the general procedures outlined in Section 1.3.

1.4.1 Considerations for Municipal Hot Spot Deletion

The municipal wastewater system has been successfully upgraded, and management improved, as shown by:

(i) in the case of large municipal hot spots, when a programme of action has been implemented in accordance with the objectives of the JCP;

(ii) the sewer systems have been fully established and/or existing ones improved, with leak detection and repair procedures in place, and efforts are being undertaken consistent with a plan of action to meet applicable HELCOM Recommendations in a phased manner; and

(iii) municipal sludge handling and disposal is done in accordance with international requirements.

1.4.2 Considerations for Industrial Hot Spot Deletion

The individual industrial facility or a complex of facilities has successfully met the criteria for deletion, if:

(i) for abandoned facilities, effective decommissioning and site remediation has occurred to minimise contaminated run-off;

(ii) the industrial sewer systems have been fully established and/or existing ones improved, with leak detection and repair procedures in place, and efforts are being undertaken consistent with a plan of action to meet applicable HELCOM Recommendations in a phased manner; and/or

(iii) industrial sludge handling and disposal is done in accordance with international requirements.

PART II Agricultural Non-Point Source Hot Spots

2.1 Procedure for Including New Agricultural Non-Point Source Hot Spots

The development and adoption of new agricultural policies and practices, potential revival of older input-intensive agriculture and increases in livestock production could create site-specific situations in the Baltic Sea Region which would result in a need to consider new agricultural non-point source hot spots. In undertaking activities in this area, special reference should be made to Annex III of the Helsinki Convention, which addresses environmental management issues in agriculture.

Table 3. General Procedures for Including New Agricultural Hot Spots

Step 1 **Quantify the site's threat and impact on the Baltic Sea**	Considerations: (i) High and/or significant amounts of polluting substances are released via rivers or directly from the site to Baltic Sea marine and coastal waters, including wetlands, lagoons and semi-enclosed basins; or (ii) The emissions contribute considerably to an impact or threaten Baltic Sea marine and coastal ecosystems, including wetlands, lagoons and semi-enclosed basins; or (iii) The emissions contribute considerably to incremental pollution of the Baltic Sea via rivers, coastal lagoons and wetlands. In assessing the threat and impact, special attention should be given to: * Specially protected and other vulnerable areas, including spawning and nursery grounds (the aim is to protect these areas); * Highly polluted areas (the aim is to improve the quality of these areas); and * Highly polluted rivers (the aim is to identify the main sources of pollution and to reduce it).
Step 2 **Check the compliance of the site with Annexes of the Helsinki Convention, relevant HELCOM Recommendations and other relevant international agreements**	Considerations: The site is significantly out of compliance with Annexes of the Helsinki Convention (especially Annex III) and relevant HELCOM Recommendations, or other international agreements relevant to countries in the Baltic Sea catchment area, if HELCOM Recommendations are not available and/or applicable.
Step 3 **Develop an initial analysis of the management area and estimated levels of non-point source pollution to be addressed, implementation costs, and management requirements**	Considerations: The pollution problem can be addressed by a planned programme of farm level interventions, with an outlined time frame and specified reduction goals, by taking cost-effective approaches with regard to the impact on the Baltic Sea marine and coastal ecosystem, including semi-enclosed basins. It includes a site that can be clearly defined with regard to the geographical area of the site on the basis of either administrative boundaries and/or drainage basin/sub-basin boundaries. The types of interventions undertaken should have a demonstrated ability to lead to long-term reduction in non-point source pollution, on the basis of applied research programmes.

These source-specific considerations are meant to follow the general procedures outlined in Table 3 above. It is anticipated that areas proposed for inclusion as hot spots would not have management plans prepared and under implementation for the control of non-point source pollution from agriculture. The agricultural area or farm should be considered for inclusion as a hot spot, if it is found to exhibit one or more of the following characteristics:

(i) it is a watershed with an animal density higher than [1.5] livestock units per ha or an area with large animal farms with more than 250 livestock units, which cannot demonstrate that fertilisers and manure are adequately stored and applied on an appropriate area and according to official national or regional fertilisation guidelines;

(ii) there is a general lack of implementation of environmentally sound farming practices as described in the provisions of Annex III to the Helsinki Convention; and/or

(iii) it is located in a vulnerable area that requires special measures according to national considerations, which are not fulfilled.

2.2 Considerations for Agricultural Hot Spot Deletion

2.2.1 Overview

General procedures for deleting agricultural hot spots are outlined in Table 4. More specific considerations for agricultural hot spot deletions are included in section 2.2.2 - Criteria for Agricultural Hot Spot Deletion. Two key operational issues have been addressed in the development of procedures for the deletion of agricultural hot spots:

(i) given the large size of the original agricultural hot spots in the JCP, it is recommended that the co-operating countries subdivide the larger drainage basins into smaller management units which can be evaluated on an individual basis for potential deletion following the adoption and funding of management plans or significant changes in land use; and

(ii) recognising the slow response times of interventions for the control of non-point source pollution from agriculture, countries should provide satisfactory information concerning the types of management plans, monitoring programmes, funding commitments and their implementation status, as the basis for deleting an individual management unit.

2.2.2 Criteria for Agricultural Hot Spot Deletion

An agricultural hot spot or subdivision thereof, may be considered for deletion, provided that the hot spot unit has been formally defined by the co-operating government on the basis of administrative and/or drainage basin/sub-basin boundaries, long-term environmental goals are established for the area, and it fulfils the following criteria:

(i) an agricultural non-point source management plan has been prepared, which includes an appropriate monitoring programme, and there is demonstrated funding which will be adequate for a sustained incremental programme of on-farm activities including improved agricultural practices, investments in manure, urine and slurry handling, and the establishment of buffer strips;

(ii) the management plan will result, through a series of phased actions, in all relevant provisions of the Helsinki Convention Annex III being fulfilled;

(iii) farms within a watershed with an animal density higher than [1.5] livestock units per ha or large animal farms with more than 250 livestock units have demonstrated that fertilisers and manure are adequately stored and are applied on an appropriate area and according to official national or regional fertilisation guidelines; and

(iv) if located in a vulnerable area that requires special measures according to national considerations, the management plan will support a series of activities to fulfil these requirements.

Table 4. General Procedures for Agricultural Hot Spot Deletion

Step 1	Considerations:
Quantify pollutant loadings and downstream water quality	Implementation of the management plan for the area would support a series of farm-level interventions that over the medium and long term would result in a high and/or significant reduction of amounts of polluting substances released via rivers or directly to Baltic Sea marine and coastal waters, including wetlands, lagoons and semi-enclosed basins.
Step 2	Considerations:
Compare monitoring results against relevant HELCOM Recommendations and Annexes or other relevant international agreements	The management plan for the area is technically sound and adequately funded to allow for a phased series of farm-level activities that are consistent with Annexes of the Helsinki Convention (especially Annex III), and relevant HELCOM Recommendations, or other international agreements relevant to countries in the Baltic Sea catchment area, if HELCOM Recommendations are not available and/or applicable.
Step 3	Considerations:
Assess management plan, performance indicators and monitoring programme	Assess whether the management plan will fulfil objectives for the reduction of non-point source pollution from agriculture. Review the adequacy of the monitoring programme with regard to information on farm-level interventions and longer-term environmental benefits through pollution load reductions.

PART III Coastal Lagoon and Wetland Hot Spots

3.1 General Considerations

The JCP recognises the critical importance of coastal lagoons and wetlands to the restoration of the "ecological balance" of the Baltic Sea and the need to manage and conserve the coastal zone for public use and environmental benefit. Coastal lagoons and wetlands are often considered as areas of outstanding "natural beauty" which must be conserved as habitat for migrating birds and economically important fish; as nurseries for many species of marine flora and fauna; and as having an important role in filtering pollutants and buffering changes in the hydrological system. These areas are also often intensively exploited for industry, shipping, urbanisation, fishing, aquaculture and tourism. In addition, they often receive large loads of pollutants from municipal, industrial and agricultural sources in the catchment area and are subject to heavy pressures for incremental reclamation and conversion to other types of land use. In the countries in transition, the large-scale economic and land ownership changes associated with adoption of a market economy may result in a need to add new areas to the hot spot list due to emerging development pressures; in other cases, the preparation and funding of area management plans and restoration measures for specific coastal areas can provide the basis for deletion from the list of hot spots.

3.2 Key Parameters for Characterisation of Coastal Ecosystems

The key parameters that should be taken into consideration when dealing with characterisation of coastal ecosystems include the following items: (i) physical/chemical parameters; (ii) biological/ ecological parameters; and (iii) economic, sociological and cultural parameters. Information on the evaluation of these parameters in the context of the work of the PITF is provided in Attachment A. All assessments for the potential inclusion or deletion of hot spots concerning a coastal or marine

area, especially coastal lagoons and wetlands, should take into account the full range of these parameters.

3.3 Procedures for Inclusion of Coastal Lagoon and Wetland Hot Spots

The term “hot spot“ comes into use for a coastal lagoon or wetland, if the potential qualities of the area are considered to be substantial, in terms of biodiversity and landscape, natural resources for human use, and/or the area plays an important role as a buffer for pollution loads and variations in the hydrological cycle, but these aspects are now in a state of deterioration. The general procedure for determining if a given coastal lagoon or wetland should be included as a hot spot is outlined in Table 5.

The procedure has the form of two consecutive steps as illustrated in the left column of the table. For each step, parameters to be taken into consideration are given in the right column of the table:

(i) **First Step.** In the first step, the objective is to determine if the area is subject to significant adverse effects from pollution, habitat conversion or other types of negative impacts. In addition, for the area to be recognised as a hot spot, it must comprise some features of particular interest. The status and trends of development regarding the potential “values” are analysed. An important part of the analysis is an assessment of the development of factors that can contribute to a deterioration of “values,” such as eutrophication and pollution loads, siltation and erosion, and/or land reclamation and drainage. If the analysis shows that the status of the potential “values” is unacceptable and/or the development of the area will lead to a further deterioration of “values” in the coastal zone, then the area is a candidate for inclusion on the list of hot spots.

(ii) **Second Step.** Step 2 aims at an analysis of the management of such areas. With the many and often conflicting interests and activities in these areas, proper management plans are of decisive importance for sustainable development. If the analysis shows that a management plan has not been prepared and/or management is inadequate, then this coastal area, coastal lagoon or wetland is a candidate for inclusion as a hot spot.

3.4 Procedures for Deleting Coastal Lagoon and Wetland Hot Spots

The existence of formally approved management plans, whose implementation is adequately funded, is of decisive importance for sustainable development in coastal zones. Proper management plans should include integration of their objectives into economic development, land use and zoning processes; mandate use of a permitting process for exploitation of physical and biological resources; require adoption of environmental impact assessment and other types of environmental management tools; and require establishment of monitoring programmes for pollution loads and water quality, and use of indicators for the status of flora and fauna. Proper management plans should have available the authority and resources to enforce relevant legislation. National standards and legislation as well as HELCOM Recommendations and other relevant international conventions should be taken into account. The procedure for deletion of coastal lagoon and wetland areas from the list of hot spots is outlined in Table 6. It should be emphasised that clear formulation of a general objective for an area and its integration into an implementable management plan is a prerequisite for carrying out a well-founded evaluation regarding deletion of a coastal zone from the list of hot spots. Only after the completion of such an evaluation will it be possible to assess whether the management framework is sufficient to allow for deletion of an area from the list of hot spots.

Table 5. General Procedures for Including New Coastal Lagoon and Wetland Hot Spots

Step 1 **Analyse status and trends** The coastal area is taken into consideration for inclusion as a hot spot if the analysis concludes that it is of regional importance from a landscape, ecological and/or economic perspective, and that the "qualities" of the coastal zone are substantially deteriorating or are at significant risk	Considerations: (i) Pollution and nutrient loads from: * Municipal sources; * Industrial sources; * Agricultural sources; * Aquacultural sources; have a negative impact on the "qualities" of the coastal area (lagoon, wetlands, etc.). (ii) Water quality is poor and/or decreasing. (iii) Siltation/erosion is accelerated by human activities such as industrialised agriculture or gravel and mineral extraction. (iv) Human activities in the coastal area have a negative impact, such as land reclamation and drainage, habitat conversion, tourism development, traffic or discharge of nutrients and pollutants. (v) Biodiversity and landscape qualities are decreasing. (vi) Resources are not being used in a sustainable manner or are being depleted. (vii) Native ecosystems are potentially threatened by introduction of alien species.
Step 2 **Analyse the Status of the Management Plan and Implementation Experience** The coastal area is taken into consideration for inclusion as a hot spot if the analysis leads to the conclusion that conditions at a site of regional importance from a landscape, ecological and/or economic perspective, could be substantially improved by proper and relevant environmental management	Considerations: (i) No management plan for the area or a management plan that has been formally approved and integrated into the planning process but which is inadequate. (ii) No control through zoning or permitting or insufficient co-ordination of exploitation activities. (iii) No or insufficient plans for pollution prevention and/or abatement measures. (iv) No or insufficient monitoring programme for: * Nutrient and pollution loads * Water quality * Flora and fauna indicator organisms. (v) Lack of conformity with HELCOM Recommendations, or other international agreements relevant to co-operating countries, if HELCOM Recommendations are not available. (vi) Insufficient capacity and/or funding for carrying out environmental management plans and for the enforcement of legislation.

Table 6. General Procedures for Coastal Lagoon and Wetland Hot Spot Deletion

Step 1 **Assess the state of the coastal zone** The coastal area is taken into consideration for deletion as a hot spot if the analysis leads to the conclusion that the qualities of the coastal area are being restored through implementation of a well designed and adequately funded management plan and/or interventions have been made to address or minimise specific threats	Considerations: (i) Pollution and nutrient loads from: * Municipal sources; * Industrial sources; * Agricultural sources; * Aquacultural sources have significantly decreased or have little or no negative impact on the "qualities" of the coastal area. (ii) Water quality is clearly improving and/or good. (iii) Siltation/erosion due to human activities has ceased or is at an acceptable level. (iv) Human activities in the area with a negative impact, such as land reclamation or discharge of nutrients and pollutants, etc. have ceased. (v) Biodiversity and landscape qualities have improved or are re-established. (vi) Procedures are established to control the risks of habitat conversion and degradation. (vii) Use of resources is sustainable. (viii) Native ecosystems are not threatened by introduction of alien species.
Step 2 **Review of Management Plan** The coastal area is taken into consideration for deletion as a hot spot if the analysis leads to the conclusion that the environmental management of the coastal area is adequate to ensure attainment of the stipulated objectives of the management plan and allow for sustainable use	Considerations: (i) Clear general objectives for the area exist, adequate authorities have been established for implementation of the management plan, and adequate funding is available. (ii) Sufficient co-ordination has been established for review, permitting and monitoring of exploitation activities. (iii) Sufficient plans for pollution prevention and abatement measures have been developed, including actions for reduction of eutrophication. (iv) Effective monitoring programmes are established and funded for: * Water quality, including eutrophication trends; * Flora and fauna indicator organisms; * Nutrient and pollution loads. (v) Conformity with HELCOM Recommendations, or other international agreements relevant to the riparian countries, if HELCOM Recommendations are not available. (vi) Sufficient capacity and funding are available for carrying out environmental management plans and for enforcement of legislation.

ATTACHMENT A

KEY PARAMETERS FOR CHARACTERISATION OF BALTIC COASTAL ECOSYSTEMS, INCLUDING COASTAL LAGOONS AND WETLANDS

1. Introduction

The protection, conservation and maintenance of coastal ecosystems in the Baltic Sea Region requires a long-term commitment and recognition that these areas are subject to a wide and complex variety of natural and man-made forces. The series of coastal lagoons and wetlands which border the Baltic Sea have been given special attention in the JCP given their critical role in the maintenance of the "ecological balance" of the Baltic Sea. This attachment is intended to provide the representatives of the co-operating governments, members of the PITF and other interested parties with a brief overview of the key parameters to be examined in the assessment of the quality of coastal ecosystems.

2. Physical/Chemical Parameters

Siltation is a common phenomenon in coastal areas. Silt is transported by rivers to coastal lagoons where it is deposited, and in some cases lagoons can silt up completely. Erosion takes place as a natural process at the shoreline or when natural vegetation is destroyed, exposing the underlying sediment to the prevailing waves and currents. Human activities such as industrialised agriculture and discharge of nutrients and pollutants in the catchment area, coastal construction and dredging activities, and gravel or mineral extraction in the coastal zone or in the sea, can strongly accelerate siltation and erosion processes.

Active land reclamation has also taken place in many coastal lagoons and wetlands, and this process of course changes the ecosystem of the areas dramatically. The conversion of key areas of ecologically important habitat presents a major impact throughout the Region and is a problem that must be addressed by effective land use planning, routine compliance with zoning decisions and routine application of environmental impact assessment procedures. Areas of critical habitats, such as those either currently designated or eligible for protection under the Ramsar Convention or identified as being threatened in the HELCOM - "Red List of Marine and Coastal Biotopes and Biotope Complexes of the Baltic Sea Area," should receive high priority for management and conservation measures.

Water quality is important in determining the life conditions for flora and fauna in the area. The prevailing water quality is the result of several factors, with pollution loads from sources in the catchment area, the decomposition process, and the prevailing hydraulic regime among the most important. Coastal lagoons and wetlands in the Baltic Sea Region often receive large loads of pollutants in the form of COD and nutrients from domestic, industrial and agricultural sources in the catchment area. The pollutants and nutrients can strongly affect the sensitive ecosystems of coastal lagoons and wetlands by starting eutrophication processes and having an adverse effect on flora and fauna.

3. Biological/Ecological Parameters

Coastal lagoons and wetlands in the Baltic Sea Region often have a high and unique biodiversity. They are important areas as habitats for migrating birds, and offer spawning and nursery grounds for economically important fish, and provide habitat for diverse terrestrial and aquatic flora and fauna. The ecosystems of coastal lagoons and wetlands are in general sensitive, and siltation, erosion, drainage, eutrophication and other forms of pollution can relatively quickly lead to serious and sometimes irreversible changes of the flora and fauna. Protected areas of a number of types

currently exist and additional areas are proposed for listing as protected areas under international and national guidelines.

4. Economic, Social and Cultural Parameters

The use of coastal lagoons and wetlands is often of great importance to the economy of local areas in the Baltic Sea Region. In many cases, coastal lagoons and wetlands are intensely used for industry, shipping, urbanisation, fishing, aquaculture, tourism and recreation. Many communities and individuals earn their income from employment in sectors like tourism and fisheries that depend on sustainable development of the areas. The analysis of sustainability of the use of these areas should give consideration to the short, medium and long-term benefits at both the local and national level. Special attention should be given to the potential opportunities for local residents to benefit from improved management of these fragile resources through tourism, eco-tourism, recreation and fisheries. Some of the human uses of the areas may be conflicting. For example, land reclamation of coastal lagoons and wetlands for urbanisation or agricultural purposes may conflict with fishery or tourism activities. Proper management plans are therefore of decisive importance for sustainable development in coastal areas.

Appendix 1

Gulf of Finland

Hot Spot No	Country	Site Name	Treated Discharge *Mm^3/year*	Untreated Discharge *Mm^3/year*	$BOD_{5/7}$ Reduction *%*	$BOD_{5/7}$ Discharge *tonnes/year*	Phosphorus Reduction *%*	Phosphorus Discharge *tonnes/year*	Nitrogen Reduction *%*	Nitrogen Discharge *tonnes/year*
17	Finland	Helsinki Region	NR	NR	NR	NR	NR	NR	NR	NR
18	Russia*	St. Petersburg (Sewers)	0,0	218,7	NI	19 490,0	NI	595,1	NI	3 541,0
19	"	St. Petersburg (3 urban WWTP)	808,1	22,1	88 - 97	31 019,9	63 - 80	985,0	57 - 73	8 546,0
20	"	St. Petersburg (25 suburban plants)	93,9	18,7	64 - 97	1 151,4	32 - 70	192,7	14 - 52	2 185,0
21	"	St. Petersburg (P-removal)	NI total volume: 1,900	NI			*Need to be clarified*			
26	Estonia	Kothla Järve	9,7	0,9	85	739,0	47	9,5	22	335,0
28	"	Tallin	64,6	0,1	97	8 448,0	72	199,7	43	633,0
Total			*Can not be determined due to lack of data*							

NR = No report submitted

NI = No info submitted

*) Russia has reported discharges of "BOD-tot", but not BOD_5 or BOD_7 as stipulated

Appendix 2

Gulf of Riga

Hot Spot No	Country	Site Name	Treated Discharge *Mm^3/year*	Untreated Discharge *Mm^3/year*	$BOD_{5/7}$ Reduction *%*	$BOD_{5/7}$ Discharge *tonnes/year*	Phosphorus Reduction *%*	Phosphorus Discharge *tonnes/year*	Nitrogen Reduction *%*	Nitrogen Discharge *tonnes/year*
31	Estonia	Haapsalu	0,5	0,1	97	3,4	82	0,6	55	9,4
32		Matsalu Bay Management Prog	NR	NR	NR	NR	NR	NR	NR	NR
33		Pärnu	5,2	0,0	98	40,0	87	5,0	89	21,0
34		"	1,5	0,1	96,2	19,8	84,5	1,7	37,6	14,9
37	Estonia/ Latvia	Gulf of Riga Mgt	NR	NR	NR	NR	NR	NR	NR	NR
41	Lithuania*		9,5	0,0	97	113,0	64	27,0	62	291,0
42	Latvia		8,6	65,7	94	519,7	53	188,8	48	1 037,5
46	"		10,4	0,0	18	1 366,5	27	33,5	46	206,5
47	Belarus	Vitebsk region	NR	NR	NR	NR	NR	NR	NR	NR
		Viebsk	NR	NR	NR	NR	NR	NR	NR	NR
		Novopolotsk	NR	NR	NR	NR	NR	NR	NR	NR
Total			*Can not be determined due to lack of data*							

*) 1.58 million m^3 of the "treated discharge" is "insufficiently treated" wastewater

Appendix 3

Eastern Gotland Basin incl. Gdansk Basin

Latvian Coast

Hot Spot No	Country	Site Name	Treated Discharge $Mm^3/year$	Untreated Discharge $Mm^3/year$	$BOD_{5/7}$ Reduction %	$BOD_{5/7}$ Discharge tonnes/year	Phosphorus Reduction %	Phosphorus Discharge tonnes/year	Nitrogen Reduction %	Nitrogen Discharge tonnes/year
48	Latvia	Liepaja	10,9	0,0	84	167,8	NI	6,7	31	161,1
Total			*10,9*	*0,0*		*167,8*		*6,7*		*161,1*

Nemunas River Basin

Hot Spot No	Country	Site Name	Treated Discharge $Mm^3/year$	Untreated Discharge $Mm^3/year$	$BOD_{5/7}$ Reduction %	$BOD_{5/7}$ Discharge tonnes/year	Phosphorus Reduction %	Phosphorus Discharge tonnes/year	Nitrogen Reduction %	Nitrogen Discharge tonnes/year
51	Lithuania	Kaunas	0,0	29,8	NI	7 220,0	NI	296,0	NI	1 606,0
53	"	Kedainiai*	3,4	0,0	95	50,0	52	8,0	60	64,0
55	"	Panevezys*	11,5	0,0	95	356,0	45	53,0	67	353,0
57	"	Marijampole*	6,7	0,0	96	164,0	70	13,0	73	107,0
58	"	Alytus	6,3	0,0	90	283,0	86	20,0	72	154,0
59	"	Vilnius	52,0	0,0	95	905,0	33	163	78	463,0
61	Belarus	Grodno	NR	NR	NR	NR	NR	NR	NR	NR
Total			*Can not be determined due to lack of data*							

*) The data on "treated discharge" includes "insufficiently treated" water

Lithuanian Coast, Russian Coast and the Baltic Coast of Poland — Appendix 3

Hot Spot No	Country	Site Name	Treated Discharge $Mm^3/year$	Untreated Discharge $Mm^3/year$	$BOD_{5/7}$ Reduction %	$BOD_{5/7}$ Discharge tonnes/year	Phosphorus Reduction %	Phosphorus Discharge tonnes/year	Nitrogen Reduction %	Nitrogen Discharge tonnes/year
63	Lithuania	Klaipeda*	23,65	0,46	43	3 342,0	30	93,0	13	785,0
65	"	Palanga*	3,47	0,00	61	220,0	21	13,0	17	96,0
66	Lith./Russ.	Kursiu Lagoon	NR	NR	NR	NR	NR	NR	NR	NR
67	Russia	Kaliningrad*/**	91,89	6,11	0	11 000,0	0	210,9	0	1 393,6
73	Russ./Pol.	Vistula Lagoon	NI	NI	NI	NI	NI	NI	NI	NI
	Poland	Braniewo	NI	NI	NI	NI	NI	NI	NI	NI
	"	Malbork	NI	NI	NI	NI	NI	NI	NI	NI
	"	Nowy Staw -> to Malbork WWTP	NI	NI	NI	NI	NI	NI	NI	NI
	"	Elblag	NI	NI	NI	NI	NI	NI	NI	NI
	"	Vistula Spit -> to Stegna WWTP	NI	NI	NI	NI	NI	NI	NI	NI
	"	Stegna WWTP	NI	NI	NI	NI	NI	NI	NI	NI
	"	Orneta, Sztum, Susz, Dzierzgon and Pieniezno	NI	NI	NI	NI	NI	NI	NI	NI
	"	Frombork	0,14	0,00	16	18,2	8	1,6	24	24,5
	"	Krynica Morska	0,31	0,00	NI	7,7	NI	5,4	NI	22,8
	"	Tolkmicko	0,28	0,00	99	0,7	44	4,7	76	9,4
	"	Piaski	0,01	0,00	NI	1,5	NI	0,3	NI	1,8
74	"	Koszalin	12,96	0,00	>95	95,9	>90	10,8	30	500,0
75	"	Gdynia - Debogórze	28,06	0,00	97	332,0	86	49,4	75	451,8
76,1	"	Gdansk - Wschód	37,66	0,00	71	4 255,0	76	105,0	34	1 540,0
Total			*Can not be determined due to lack of data*							

*) The data on "treated discharge" includes "insufficiently treated" water

**) Russia has reported discharges of "BOD-tot", but not BOD_5 or BOD_7

Appendix 4

Arkona Basin

Oder-Odra River Basin

Hot Spot No	Country	Site Name	Treated Discharge $Mm^3/year$	Untreated Discharge $Mm^3/year$	$BOD_{5/7}$ Reduction %	$BOD_{5/7}$ Discharge tonnes/year	Phosphorus Reduction %	Phosphorus Discharge tonnes/year	Nitrogen Reduction %	Nitrogen Discharge tonnes/year
97 [1]	Poland	Szczecin-Pommorzany	0,0	9,8	NI	3 463,0	NI	85,8	NI	716,9
99	"	Poznan	51,1	0,0	39	11 223,0	28,3	333,0	17,89	2 657,0
100	"	Lodz [2]	88,6	0,0	31	13 178,2	27	451,1	12	3 337,5
101	"	Zielona Gora [3]	7,6	0,0	NI	873,0	NI	35,9	NI	285,4
103	"	Wroclaw	56,0	0,0	55	7 680,0	45	356,0	70	2 340,0
107	"	Katowice - West (Panewki WWTP)	5,7	0,0	86	105,0	33	23,0	62	60,0
		Podlesie WWTP [4]	NR	NR	NR	NR	NR	NR	NR	NR
109	Czech	Ostrava	NR	NR	NR	NR	NR	NR	NR	NR
113	Poland/Germany	Odra Lagoon mgt Wolin island	1,8	2,4	NI	940,0	NI	29,0	NI	110,0
	Germany	Swinemunde	NR	NR	NR	NR	NR	NR	NR	NR
Total			*Can not be determined due to lack of data*							

1) WWTP under construction
2) The larger part of the discharged wastewater from Lodz has been mechanically treated
3) Data on discharge of treated wastewater from Zielona Gora = discharge "after starting"
4) WWTP Podlesie discharges waste water to Vistula (originally Hot Spot No. 107 was registered as "Odra Hot Spot"). The Podlesie WWTP is not reported anywhere else in the Annual Report 1999. Data on Podlesie WWTP is incorporated in the discharge figures for Panewski WWTP

Arkona Basin

Hot Spot No	Country	Site Name	Treated Discharge $Mm^3/year$	Untreated Discharge $Mm^3/year$	$BOD_{5/7}$ Reduction %	$BOD_{5/7}$ Discharge tonnes/year	Phosphorus Reduction %	Phosphorus Discharge tonnes/year	Nitrogen Reduction %	Nitrogen Discharge tonnes/year
115	"	Neubrandenburg	4,0	0,0	98	40,0	98	1,0	66	144,0
117	"	Stavenhagen City/ Malchin	1,7	0,0	98	24	99	0,5	83	43
Total			*5,7*	*0,0*		*64,0*		*1,5*		*187,0*

Vistula River Basin

Appendix 3

Hot Spot No	Country	Site Name	Treated Discharge $Mm^3/year$	Untreated Discharge $Mm^3/year$	$BOD_{5/7}$ Reduction %	$BOD_{5/7}$ Discharge tonnes/year	Phosphorus Reduction %	Phosphorus Discharge tonnes/year	Nitrogen Reduction %	Nitrogen Discharge tonnes/year
78	Poland	Bydgoszcz-Fordon	6,8	16,9	96	3 149,8	NI	243,9	60	1 357,7
79*	"	Bydgoszcz-Kapusciska	0,0	19,5	NI	4 100,0	NI	99,5	NI	900,0
80	"	Torun**	NI	NI	NI	NI	NI	NI	NI	NI
81	"	Wloclawek	3,2	3,5	NI	25,2	NI	NI	NI	357,2
82	"	Warsaw - Czajka	76,8	0,0	93	1 426,6	88	69,4	38	1 931,5
83,1*	"	Warsaw - Siekierki	0,0	40,3	NI	10 220,0	NI	327,0	NI	1 635,0
84*	"	Warsaw - Pancerz	0,0	175,2	NI	38 018,0	NI	1 559,0	NI	18 396,0
85	"	Lublin - Hajdow	30,8	0,0	95	638,5	29	244,2	38	1 162,8
86	"	Crakow - Plaszow	46,6	33,4	45	14 257,0	65	266,0	28	1 687,0
87,1*	"	Crakow - Kujawy	0,0	23,9	NI	3 897,0	NI	155,0	NI	990,0
88	"	Katowice-East (10 WWTP)	NR	NR	NR	NR	NR	NR	NR	NR
93	Belarus	Brest	NR	NR	NR	NR	NR	NR	NR	NR
94	Ukraine	L'vov	NR	NR	NR	NR	NR	NR	NR	NR
Total			*Can not be determined due to lack of data*							

*) WWTPs under construction

**) No info on Torun concerning 1998. However, Poland has submitted data achieved after start up, representing 7 months 1999, as shown below

Hot Spot No	Country	Site Name	Treated Discharge $Mm^3/year$	Untreated Discharge $Mm^3/year$	$BOD_{5/7}$ Reduction %	$BOD_{5/7}$ Discharge tonnes/year	Phosphorus Reduction %	Phosphorus Discharge tonnes/year	Nitrogen Reduction %	Nitrogen Discharge tonnes/year
80	Poland	Torun	13,43	0,00	94	180,6	86	15,3	82	113,2

Belt Sea, The Sound and Kattegat

Belt Sea

Hot Spot No	Country	Site Name	Treated Discharge *Mm^3/year*	Untreated Discharge *Mm^3/year*	$BOD_{5/7}$ Reduction *%*	Phosphorus Discharge *tonnes/year*	Phosphorus Reduction *%*	Nitrogen Discharge *tonnes/year*	Nitrogen Reduction *%*	Nitrogen Discharge *tonnes/year*
119,1	Germany	Lübeck - Central	19,0	0,0	96	288,0	92	12,0	19	932,0
		Lübeck - Priwall	NR	NR	NR	NR	NR	NR	NR	NR
		Lübeck - Ochsenkopf	NR	NR	NR	NR	NR	NR	NR	NR
120	"	Wismar	3,5	0,0	90	122,5	94	4,2	43	228
121	"	Rostock	*Deleted Hot Spot*							
Total			*Can not be determined due to lack of data*							