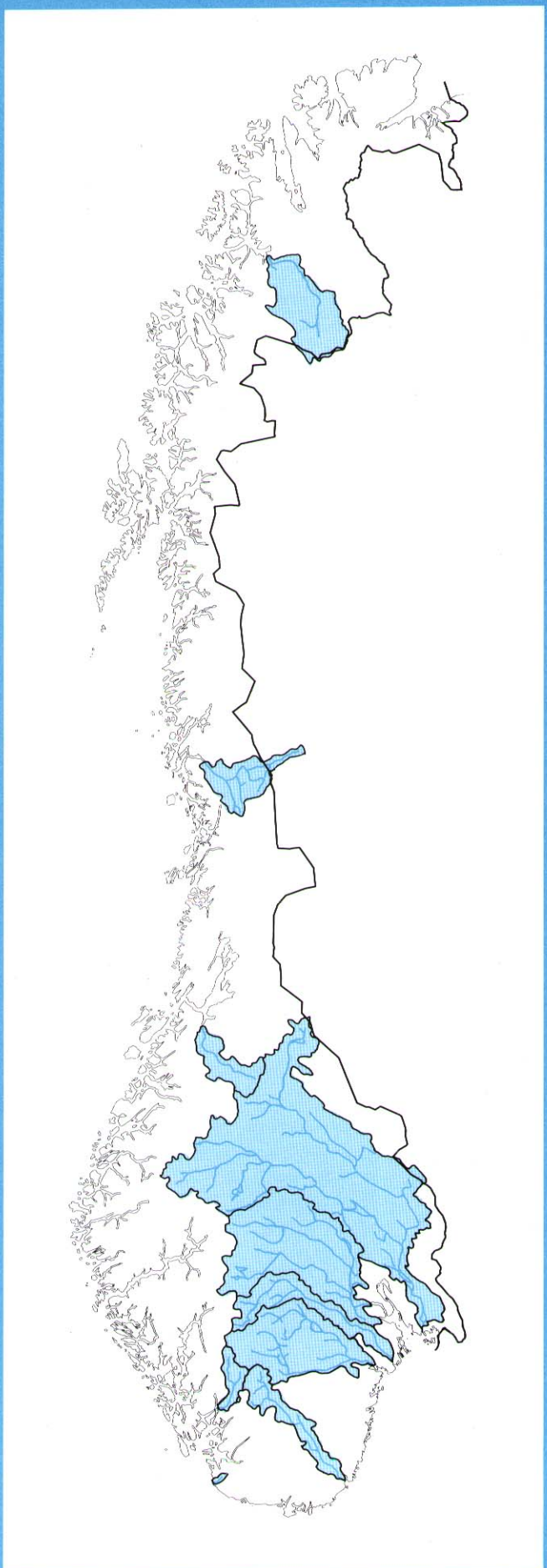

SFT The State Pollution Control Authority

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Paris Convention

Annual report on direct and riverine inputs to Norwegian coastal waters during the year 1993

A Principles, results and discussions

B Data report

TA-1130/1994

NIVA Norwegian Institute for Water Research

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Abstract:

Riverine inputs of nutrients, selected heavy metals and organic micropollutants to Norwegian coastal waters from 10 main and 145 tributary rivers have been monitored during 1993. The inputs from rivers not monitored as well as direct discharges to marine waters along the coast from Sweden to Russia have been estimated. According to the results, total annual nutrient load to coastal waters from landbased sources, is approximately 3680 tons of phosphorus and 93800 tons of nitrogen. About 34 per cent of the phosphorus and 55 per cent of the nitrogen are inputs from the monitored rivers and tributaries. Most inputs of heavy metals are low, especially the riverine inputs of Cd, Pb and Hg. A few values of Cd and Pb are below the detection limits of the specific analysis. This is also the case for Hg except for the "Skagerrak-rivers", where 79 % of the Hg-values were above the detection limit. Most values of the different congeners of PCB were below the limit. The pesticide lindane is detected in most analyses in small amounts. Total load of this compound is estimated to about 87 kg. The largest yields from heavy metals comprise copper and zinc, with input estimates of 273 and 905 tons, respectively.

Retention in the fjords is not included in the above mentioned values, which in several cases would reduce the actual load to open marine waters considerably.

4 keywords, Norwegian

1. Forurensningstilførsler
2. Norske kystområder
3. Elvetilførsler
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The National Environmental Monitoring Programme

Paris Convention

Annual report on direct and riverine inputs to Norwegian coastal waters during the year 1993

A Principles, results and discussion
B Data report

Oslo, October 1994
Project manager: Gjertrud Holtan
Co-workers: Dag Berge
Hans Holtan
Terje Hopen

NIVA Norwegian Institute for Water Research

PREFACE

The report presents the data from the 1993 monitoring of waterborne pollutants, both riverine and direct discharges, to the Norwegian coastal waters. The study is part of a joint monitoring programme under the "Paris Convention for the prevention of Marine Pollution from Landbased Sources". The Norwegian contribution is administered by the Norwegian Pollution Control Authority (SFT) which has contracted the Norwegian Institute for Water Research (NIVA) to perform the actual investigations.

The 1993-investigation lasted from January throughout December. This report is the Norwegian part of the 1993 study, divided into two parts:

A: Principles - Results and Discussion
B: Data Report.

The Programme Committee has consisted of Dag Rosland and John Rune Selvik (SFT), Dag Berge and Hans Holtan (NIVA). The practical investigation is coordinated, and performed by Gjertrud Holtan (NIVA). The calculations of all data has been performed by Terje Hopen (NIVA). The names of all participants are given in paragraph 5.

We would like to express our gratitude to all participants of the investigation, especially to the local fieldworkers for the collection and transport of the samples. The contact persons at the County Environmental Agencies and at the Municipalities of Oslo and Bærum are acknowledged for continous support and goodwill. The contact persons at the Norwegian Water Resources and Energy Administration (NVE) and The Norwegian Meteorological Institute (DNMI), Per Lofsberg and Stein Kristiansen, are acknowledged for their kind cooperation.

Report A:

TABLE OF CONTENTS

Report B: 36

SUMMARY AND CONCLUSIONS

In 1988, the Paris Commission decided to launch a comprehensive annual monitoring programme covering inputs of selected pollutants to Convention Waters. The programme was to commense in 1990, and continue the following years (PARCOM, 10/3/2-E).

The purpose is to provide the Commission, in accordance with Article 17(B) of the Paris Convention, with an assessment of the waterborne inputs to Convention waters. Another objective of the programme is to control the fulfillment of The Ministerial Declaration of the North Sea.

In 1987 the ministers of the environment from 9 North Sea states agreed to "take effective national steps in order to reduce nutrient inputs into areas where these inputs are likely, directly or indirectly, to cause pollution, and to achieve a substantial reduction (of the order of 50%) in inputs of phosphorous and nitrogen to these areas between 1985 and 1995".

This Declaration applies for the coastal zone from the Norwegian-Swedish border to Lindesnes (the southern most point of Norway). Further discharges of selected micropollutants to the whole North Sea area are to be reduced by 50-70% depending on the micropollutant in question.

In this report the results (1993) are given for riverine inputs of 10 main rivers and 145 tributaries. Thus the active monitoring programme covers drainage from 75 per cent of the main land areas. For discharges entering directly into marine recipients, i.e. sewage and industrial effluents, estimates are based on numbers from effluent control programmes. Area runoff of Total phosphorus, Total nitrogen, phosphates, nitrates and ammonia from these coastal zones are estimated by use of area specific runoff coefficients.

Greatest emphasis with regard to accuracy has been given to the input estimate of the Skagerrak region, as this is considered the most susceptible part of the North Sea. The Skagerrak reception of Norways total loads are 28 per cent of the phosphorus and 37 per cent of the nitrogen yield. In this region where 90 per cent of the area is river- monitored, more than 50 per cent of the P- and 70 per cent of the N-loads, are found in the riverine inputs.

According to the results of the 1993 investigation total annual nutrient loads to coastal waters from landbased sources in Norway are approximately 3680 tons of phosphorus and 93800 tons of nitrogen. Respectively 34 and 55 per cent of the grand total inputs of phosphorus and nitrogen are monitored in the main and tributary rivers. Riverine inputs of metals and micropollutants are low. A few of the concentrations found for Cd and Pb are lower than the detection limit requested from PARCOM. Therefore, two quantities have been estimated: one assuming that the true concentration is zero and the other assuming that the true concentration is the limit of detection. This provides maximum and minimum concentrations between which lies the true estimate. When evaluating inputs these data provide a basis for upper and lower estimates.

Inputs of cadmium are thus measured/calculated to be between 6.9 and 7.1 tons, mercury between 360 and 445 kg. The "below detection limit problem" also applies for the inputs of PCBs which are measured to be between 1.14 and 40.4 kg. The pesticide lindane was found in most analyses, but in small amounts. Assumably, lindane contamination in Norwegian rivers is mostly due to long range air pollution. Total load is estimated to about 87 kg. The largest share of heavy metals comprise copper and zinc, with input estimates of 273 and 905 tons, of which 88 and 92 % respectively, is river-monitored.

Retention of nutrients and micropollutants in the many treshold fjords of Norway is not included in the above given input figures. Estimates of retention of these substances would presumedly reduce the actual input to open marine waters.

For most Norwegian rivers the input to the sea, show large annual variations due to differences in water discharge. In order to use the data as a control of the fulfillment of the Ministerial Declaration of the North Sea, the chemical data from 1993 are in addition "normalized", i.e. 1993 chemical concentrations in river water have been multiplied with normal annual runoff (LTA) in the period 1961-90 (main rivers) and 1931-60 (tributary rivers).

1. INTRODUCTION

At the eighth meeting of the Paris Commission (Madrid, June 1986) it was decided to carry out a pilot project to test methods for estimating transport of pollutants from rivers to marine areas. The Norwegian part of the pilot study comprised the two rivers Glomma and Skienselva (Fig. 1). The project was carried out from August 1986 till August 1987, and reported in October 1987 (Lingsten, 1987).

At the Tenth Meeting of the Paris Commission (Lisbon, June 1988) the principles for the comprehensive study on riverine inputs were accepted. It was then decided to commence the study with measurements carried out in 1990, and continue the work in the following years (PARCOM, 10/3/2-E).

The purpose is to provide the Commission, in accordance with Article 17(B) of the Paris Convention, with an assessment of the waterborne inputs to Convention waters. Besides riverine inputs, the information sought also relates to direct discharges.

The objectives of this study are the following:

- To give a quantitative assessment, as accurately as possible, of all riverborne and direct inputs of selected pollutants to Convention waters on an annual basis;
- to report these data annually to the Paris Commission and review them periodically with regard to determining trends;
- for each country, to aim at monitoring on a regular basis 90% of the inputs of each selected pollutant;
- to control that the objectives of the Ministerial Declaration* for reducing the loads of heavy metals, organic micropollutants and nutrients to the North Sea in an order of 50 per cent, between 1985 and 1995, are fulfilled.

The study is to be completed for each calender year and submitted to PARCOM by the autumn following the year to which the data relate.

*

In 1987 the ministers of the environment from 9 North Sea states agreed to "take effective national steps in order to reduce nutrient inputs into areas where these inputs are likely, directly or indirectly, to cause pollution, and to achieve a substantial reduction (of the order of 50%) in inputs of phosphorous and nitrogen to these areas between 1985 and 1995".

This Declaration applies for the coastal zone from the Norwegian-Swedish border to Lindesnes (the southern most point of Norway). Further discharges of selected micropollutants to the whole North Sea area are to be reduced by 50-70% depending on the micropollutant in question.

2. RIVERSYSTEMS INCLUDED IN THE STUDY

2.1 General aspects

The length of the Norwegian mainland coast line including fjords and bays is 21347 km, and the length of the islands' coast line is 35662 km. (Table 1). Because of the length of the coast line, the great numbers of rivers, and retention processes in the fjords, in- and out-washing areas, monitoring of riverborne pollutants in Norway faces quite a few problems with respect to assessing their impact on coastal waters. Further, to measure 90 % of the load from the Norwegian rivers, a great number of rivers would have to be included, which would be extremely expensive. It was therefore decided that 8 of the major load bearing rivers should be monitored in accordance with the objectives of the comprehensive study. Further it was decided that 2 "unpolluted" rivers should be monitored at a reduced, but appropriate frequency. In these 10 rivers a number of investigations have been carried out during many years, and they have all been included in the National Monitoring Programme of Watercourses (SFT, 1980 - 1993).

These investigations have mainly concentrated on nutrients. Hence data on the load of the nutrients are satisfactory, while the data on heavy metals and organic micropollutants are rather insufficient. In addition to the ten rivers it was decided to estimate the load of 145 other rivers (tributaries) based on other 1993-monitoring programmes, and existing knowledge of the river systems concerned, supplemented with random samples taken in 1993.

The total drainage area of these monitored rivers is 229152 km², while the total area of mainland Norway is 323878 km² (Table 1). Totally 306747 km² of the drainage area is included in the investigation, of which 75 per cent is river monitored (Tables 4 and 5). It was of special importance to estimate the major loads to Skagerrak. In this region the monitored rivers and tributaries cover 94 per cent of the total area, whereof the main rivers alone 80 per cent.

The coastline is divided into subareas/-regions, comprising the drainage basins of the ten main rivers with tributaries, as shown in Fig. 1. Each subarea relates to one of the four discharge-/sub-regions (Fig. 1 and I.I-I.IV (Appendix I, Report B)) which are divided as follows (see also Table 4):

Barents Sea : From the Russian border (about $70^0$30"N, $70^0$30"E), to about $70^0$30"N, 21^0E

Norwegian Sea: Southwards of $70^0$30"N, to about 62^0 N

North Sea : Southwards of 62^0 N, to the Swedish border

- Skagerrak : From Lindesnes (the southernmost point of Norway), about $57^0$44"N to Sweden about $58^0$58"N, 11^0E.

Some key information about Norway and the adjacent oceans is given in Table 1.

Table 1. Norway: Population, areas and length of coastline.

Population	4.2 million
Area:	
- Mainland Norway	323878 km²
- The whole country incl. Svalbard and Jan Mayen	386958 km²
Coastline:	
- Length of the continental coastline	21347 km
- Not including fjords and bays	2650 km
- Length of the islands' coastline	35662 km

2.2 Riversystems monitored

The rivers chosen for the comprehensive study are the same as in 1990-1992 and presented in Table 2 and Fig. 1. The rivers marked 1 to 5, represent the major load bearing rivers in Norway. As mentioned in chapter 2.1, it was of special importance to estimate the major loads to Skagerrak (Fig. I.I, Appendix I, Report B) which is an important part of the North Sea, and considered to be most susceptible to pollutions. The five rivers (No 1 to 5) drain into the Skagerrak area. River Suldalslågen (No 7) and river Alta (No 10) are "unpolluted" riversystems where actual measurements have been carried out at a reduced frequency.

Orreelva (No 6) is draining the most intensive agriculture area in Norway especially concerning domestic animals (milk and meat production). Discharges from manure stores and silos together with area runoff from heavily manured field are causing great problems (eutrophication, including toxic algal blooms) both in Orreelva and in the other water bodies in this area.

Orkla (No 8) is also draining agriculture area, but farming in this part of the country is rather extensive compared to the Orre area. More important in this area is the abandoned mines even if situated in the upper part of the watercourse. Several other rivers in this area also receive waste -water from abandoned mines (heavy metals).

Vefsna (No 9) is a watercourse where the runoff in periods is carrying quite a lot of suspended solids and as such is comparable with other rivers in this part of the country.

Fig. 1.
Norway. Main rivers and tributaries with drainage basins, the whole country divided into four discharge regions.

Source: Norwegian water recources and energy administration.
Design: NIVA.

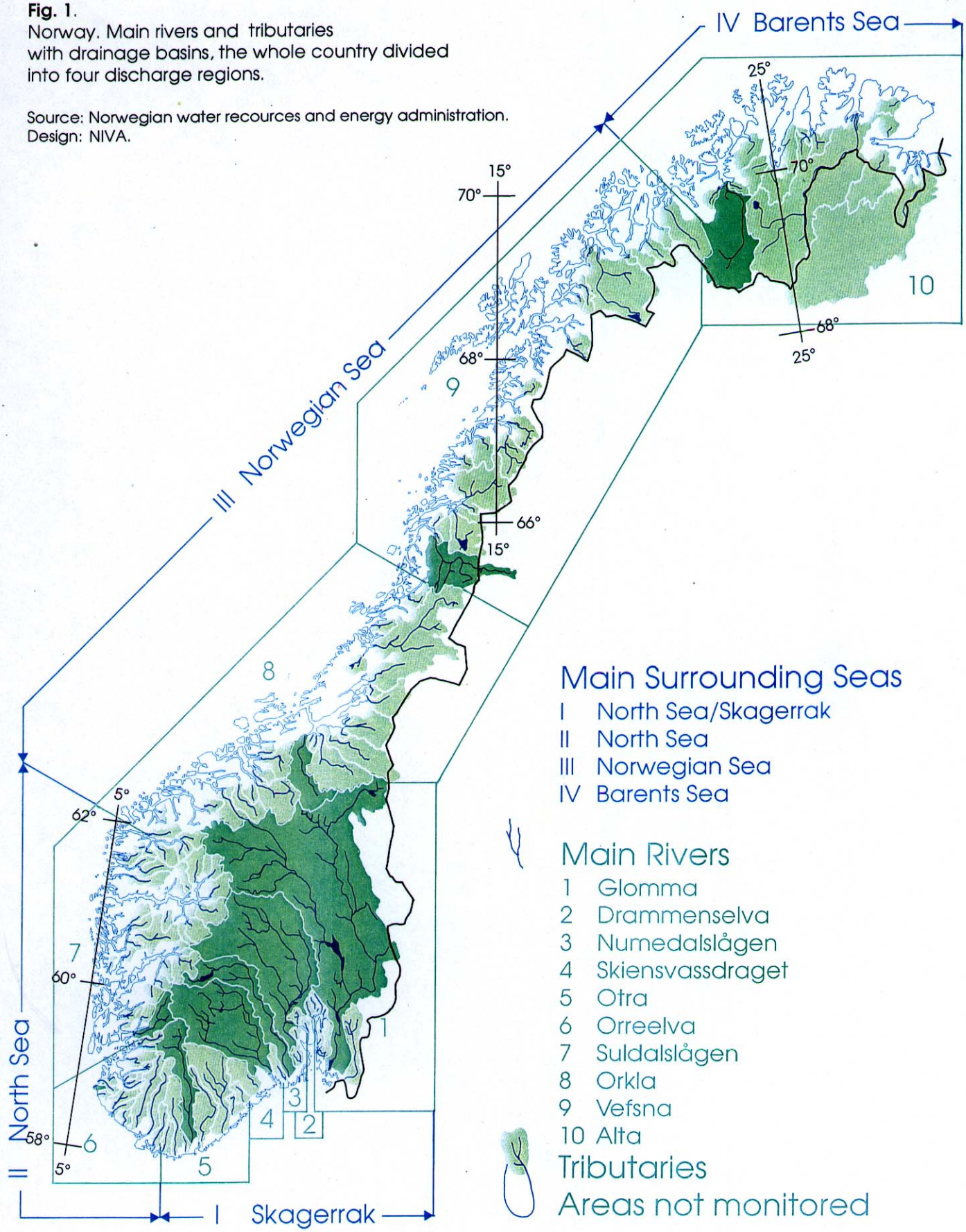

Table 2. The main rivers with catchment areas and long term average flow (LTA) 1961-90.

No	River	Catchment area, km^2	LTA 1000 m^3/day
1	Glomma	41.918	61350
2	Drammenselva	17.034	28850
3	Numedalslågen	5.577	10200
4	Skienselva	10.772	23535
5	Otra	3.738	12870
6	Orreelva	105	335
8	Orkla	3.053	5710
9	Vefsna	4.122	15655
7	Suldalslågen	1.457	7420
10	Alta	7.373	7495
Total		95.149	

The ten water courses are all representing typical river systems in different parts of the country. As such they are very useful when estimating loads of comparable rivers, i.e corrections and adjustments in the estimates of load of tributaries, which are based on fewer data than the main rivers.

All these watercourses except Orreelva are regulated for hydroelectric power production.

2.3 Other riversystems included (tributaries)

In additon to the ten main rivers, it was determined to assess inputs from the same 145 river systems as in 1990 - 1992 (Fig. 1) using "best estimates" of concentrations and flows. In total all Norwegian rivers with catchment areas larger than 500 km^2, and several of the minor rivers (streams) also are included in the 1993 study. Some information about these rivers are shown in Tables 8.1-8.10 (Appendix VIII, Report B).

3. METHODOLOGY

3.1 Methodology for assessment of riverine inputs

In carrying out the Survey, the methodology described in the Commissions Document "Principles of the Comprehensive Study on Riverine Inputs" (1988 and 1993) and in the 1990-Report from Norway (Holtan et al., 1991*), was followed.

*In this document hereafter refered to as "The 1990-Report".

As for "Site selection" we refer to the abovementioned documents, but have chosen to repeat most of the text concerning "Sampling strategy and frequency", only with necessary adjustments.

Compared with the years 1990-1992 the programme was reduced in 1993.

In all main rivers, except Suldalslågen and Alta it has been taken 12 samples at regular monthly intervals during the sampling period from January till December 1993 as prescribed in PARCOM 10/3/2/E.

For the "unpolluted" rivers Suldalslågen (No 7) and Alta (No 10), where, on the basis of existing knowledge, the concentration levels are very low, the requirement of 12 data sets per annum was found too stringent. These rivers were therefore sampled 4 times per annum. This sampling strategy should be sufficient enough to obtain a reliable estimate of the pollution load for these two rivers.

For the other rivers (tributaries), the concentrations are partly based on samples taken at the "standard" frequency (12, i.e. monthly, or more data sets per annum), which is the case in the Glomma, Oslo and Drammenselva areas. This is also the case for some of the rivers up North in the Alta area. As for most rivers draining to the North Sea, the concentrations are based on measurements of samples taken at random (at least once) and compared with measurements from the last decade. With regard to the rest of the rivers, about ten in the Orre area, and nearly all draining to the Norwegian and the Barents Sea, most data are from samples gathered in 1992.

For all main rivers except Suldalslågen and Alta the parameters lindane and PCBs have been monitored three times in 1993, in Suldalslågen and Alta, twice. For the other rivers these parameters and also Hg have been analyzed once in samples from the tributaries draining to the Skagerrak and the North Sea regions. For the rest of the rivers the concentrations of lindane, PCBs and Hg are estimated on the basis of knowledge about the activity in the different drainage areas, the findings from the main rivers and samples/analyses from these areas (up north) in 1994 (paragraph 3.2.1).

The sample frequency for the main rivers is shown in Table 3.

Table 3. Sampling sites and frequency of the main rivers.

River/Location	J	F	M	A	M	J	J	A	S	O	N	D
Glomma at Sarpsfoss	x	x	x	x	x	x	x	x	x	x	x	x
Drammenselva upstr. outl.	x	x	x	x	x	x	x	x	x	x	x	x
Numedalslågen at Bommestad	x	x	x	x	x	x	x	x	x	x	x	x
Skienselva at Klosterf.	x	x	x	x	x	x	x	x	x	x	x	x
Otra upstream outlet	x	x	x	x	x	x	x	x	x	x	x	x
Orre upstream outlet	x	x	x	x	x	x	x	x	x	x	x	x
Orkla at Vormstad	x	x	x	x	x	x	x	x	x	x	x	x
Vefsna upstream Mosjøen	x	x	x	x	x	x	x	x	x	x	x	x
Suldalslågen upstream outlet		x				x		x		x		
Alta upstream Alta			x			x		x		x		

In 1993 the water samples were taken by local persons as in 1990 - 1992. The persons were carefully instructed in advance. The samples were sent to the laboratory at NIVA immediately after sampling, usually arriving a NIVA within 24 to 36 hours later.

3.2 Parameters monitored and analytical methods

3.2.1 Chemical parameters - detection limits and analytical methods

In 1993 the following parameters were monitored in accordance with the mandate: 4 nutrients (total phosphorus, orthophosphates, total nitrogen, ammonia and nitrates), 5 metals (copper, zinc, cadmium, lead and mercury), 1 pesticide (lindane) and a general parameter (suspended particulate matter, S.P.M.). PCBs were to be monitored on a voluntary basis for the 7 congeners (IUPAC numbers 28, 52, 101, 118, 138, 153 and 180).

As detailed information on methodology and obtainable limits of detection for all measured parameters were given in the 1990-Report, only new or improved methods will be described in this report.

As informed in the 1990-Report, the detection limits of the parameters Cd and Pb at the NIVA laboratory were above those requested from PARCOM. All Cd-, Pb- and also Cu- and Zn-samples from 1992 therefore have been analyzed at the Norwegian Institute for Air Research (NILU) where metal determinations are performed on an ICP-MS-instrument (NILU, 1990). On this instrument the recommended detection limits from Parcom (Cd: 10 ng/l, Pb: 0.1 µg/l) are obtainable.

According to PARCOM (10/3/2-E) it was necessary to choose an analytical method which would give at least 70 % of positive findings (i.e. above the detection limit).

As for Cd when determined on ICP-MS, more than 70 % of the findings in samples from the main rivers were positive (from 75 to about 90%) and correspondingly in all main rivers for Pb (in 6 rivers 100%). As for the tributaries more than 70 % were above the detection limits both in the Cd- and Pb-samples.

From 1993 the limit of detection has been lowered from 2-1 ng/l (mercury) and from 0.05-0.03 ng/l (PCBs). This is a result of refinement and optimalization of the methods. As for mercury more than 70% of the findings in the 1993-samples from two of the main rivers were above the detection limit, Glomma (89%) and Numedalslågen (100%). This was also the case for the findings from tributary

rivers in the Skagerrak area where 19 of 25 river samples were higher than the detection limit (79%). As for the other main and tributary rivers, although better, we still had problems to obtain representative values for mercury, which during most of the investigation period were below the detection limit. This was also the case with PCBs. For these parameters most of the measured concentrations were extremely low, and certainly below "PARCOM-detection limits" (Appendix VII - VIII, Report B).

However, we assume that these difficulties do not affect the main results and conclusions of the 1993-study. In those cases were the results recorded were less than the limits of detection, two load quantities have been estimated, one assuming that the true concentration is zero and the other assuming that the true concentration is the limit of detection. This provides maximum and minimum concentrations within which the true estimate will fall. When used to evaluate inputs these data provide upper and lower boundaries for the estimate.

Occasionally on a voluntary basis, the metals arsenic, total chromium and nickel have been determined in some of the samples from the main and tributary rivers and are stipulated for others (Report B). These parameters also were determined on ICP-MS at NILU.

3.2.2 Method used to estimate flow rate

For the period 1931-60 the annual specific runoff from the total area of Norway is estimated at 42.9 l/s km^2. Expressed in volumetric units this amounts to 438 km^3 water, which distributed over the whole country equals a mean runoff of 1350 mm. Mean annual runoff in Norway and from the sub-regions to the main surrounding seas for the period 1931-60 are shown in Table 4. For the main rivers mean annual runoff for the last LTA-period (1961-90) have been estimated. These values are preliminary and will be adjusted when edited and published by NVE, probably next year. For the main rivers mean annual runoff (1931-60 and 1961-90) together with annual runoff for the years 1985, 1990-1993 are shown in Fig. 2, mean annual and annual precipitation for the same stations and periods in Fig. 3. As for precipitation, normals for Norway based on the LTA-period 1961-90 were published last year (DNMI, 1993).

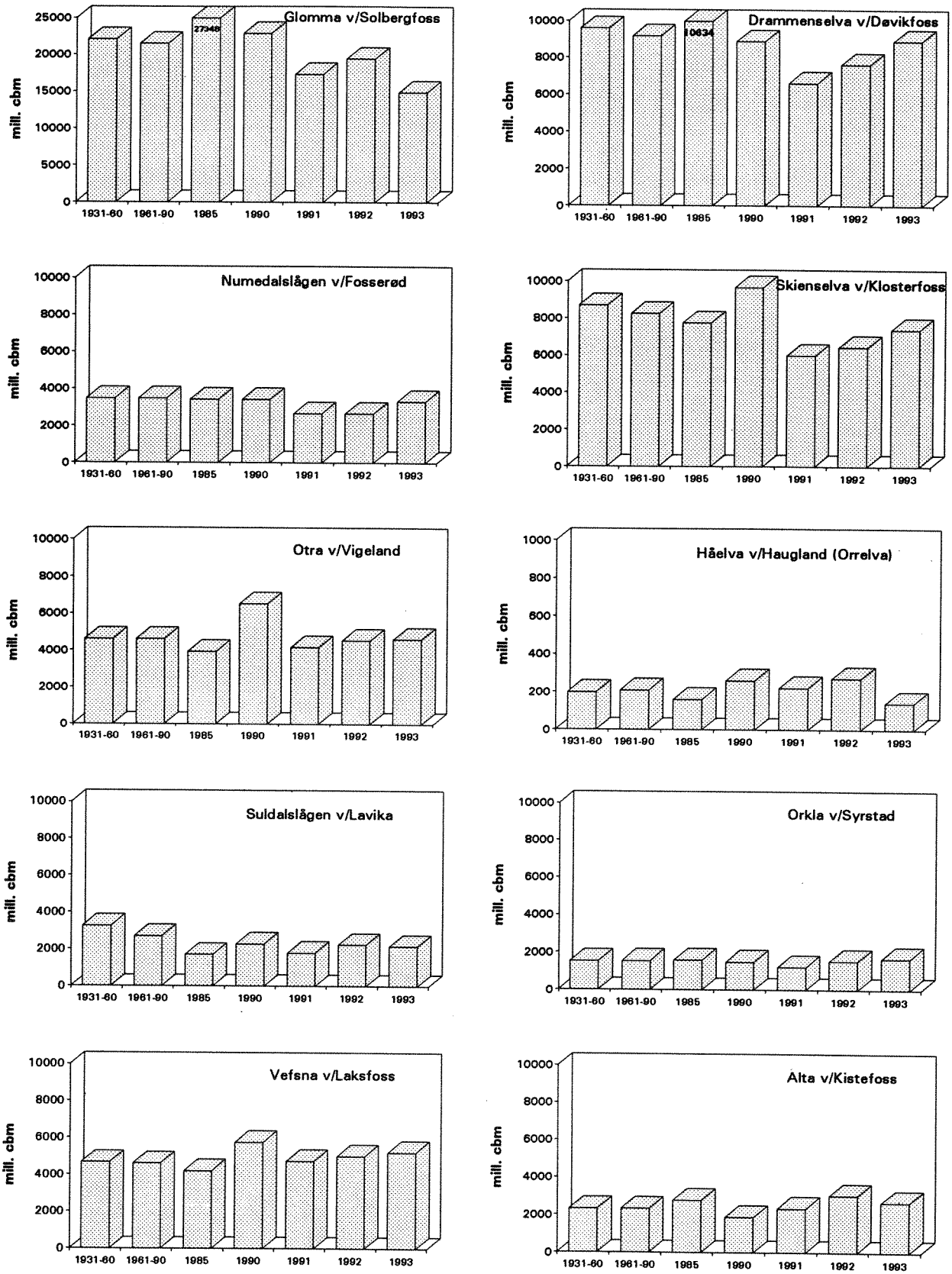

Fig. 2 Main Rivers. Mean Annual Runoff (1931-60 and 1961-90) and Annual Runoff for the Years 1985, 1990 - 1993 (mill.cbm.).
Source: Norwegian Water Resources and Energy Administration

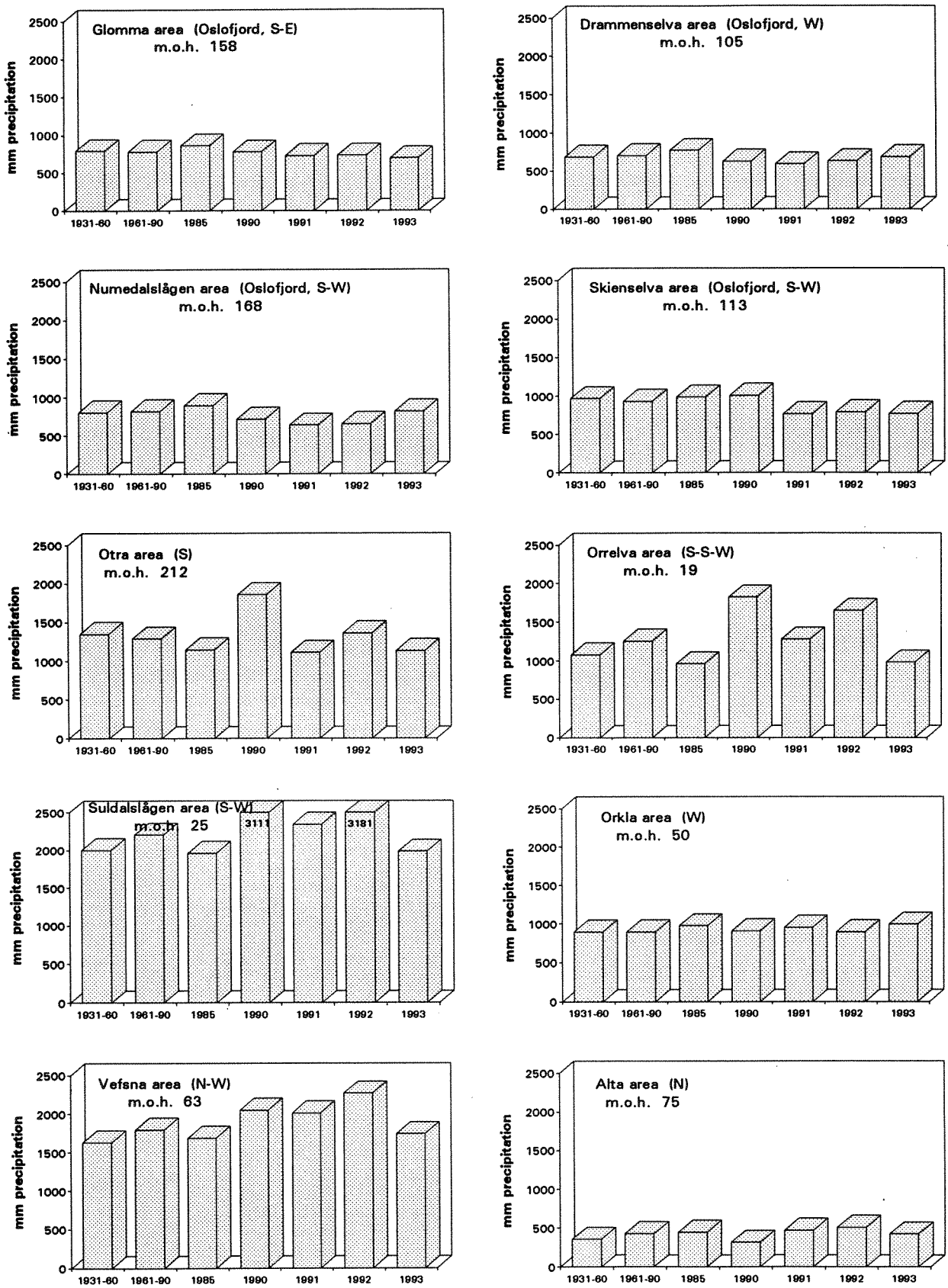

Fig. 3 Main Rivers. Mean Annual Precipitation (1931-60 and 1961-90) at Stations near Outlet and Annual Precipitation in the Years 1985, 1990 - 1993 (mm/year).
Source: The Norwegian Meteorological Institute

S = South E = East W = West N = North

Table 4. Mean annual runoff (1931-60) from the subregions to the main surrounding seas. (Fig. 1 and Appendix I, Report B).

Subregions	Main Seas	Drainage area, km^2	Runoff, mill. m^3
The Swedish border - Lindesnes	Skagerrak	98699	57934.47
Lindesnes - Stad	North Sea	138902	164875.88
Stad - the border of Finnmark	Norwegian Sea	94704	231928.67
Finnmark - the border of Sovjet	Barents Sea	73141	41462.90
Total		306747*	438267.45

* The difference between the total area and the area given in Table 1 is due to rivers which drain into the neighbouring countries (Sweden).

At a given location the runoff will change from one year to another and throughout the year. In natural river basins the seasonal variations will depend mostly on the distance from the coast, the altitude and the latitude, and on variations in precipitation. The mean discharge is determined both by the precipitation and the catchment area. Along the coast of Southern and Western Norway the summer low flows are usually dominant together with high runoff in autumn and winter. Thus although Western Norway has much more precipitation than Eastern Norway, its smaller catchment areas lead to much less absolute discharge in western rivers. In the central part of Southern Norway and in the Northern part of the country low water flows are typical both in summer and winter, whereas periods of higher runoff will appear during the snow melting period (spring and early summer). In late summer and in autumn the flow depends on the precipitation and may therefore vary considerably.

In all main rivers continous observations of the rate of flow are collected. For most rivers these stations are located upstream the sampling stations (NVE, 1994). The additional water supplied is estimated using measured rainfall data from the local catchment areas (DNMI, 1994).

With regard to the river Orkla we have changed runoff station from Vormstad to Syrstad as we were recommended by NVE to do so. According to NVE this station is more reliable than Vormstad.

For all main rivers, seasonal changes in runoff in the period 1961- 90, together with mean runoff in 1993, are shown in Fig. 4. In Fig. 5 monthly precipitation for the same period together with mean precipitation in 1993, are shown.

For the other rivers (tributaries) the runoff data partly are from continous observations as the case is for most rivers in the Skagerrak area, and also for many of the rivers draining to the remaining North Sea. For the rest of the rivers mean runoff data (1931-60) and measured rainfall data (1993) are used for flow estimates.

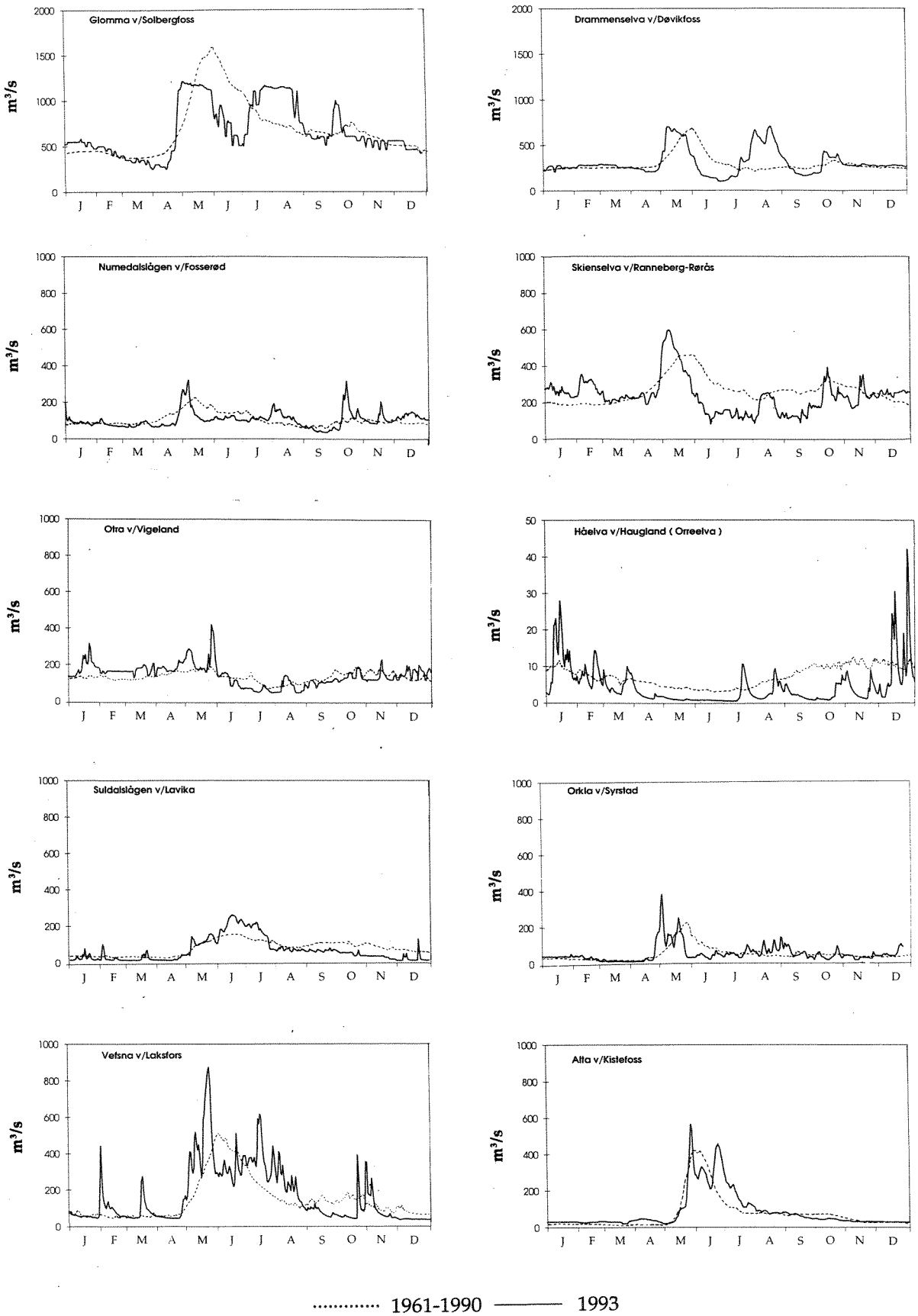

Fig. 4 Seasonal Changes in Daily Runoff (m³/s).
Source: Norwegian Water Resources and Energy Administration

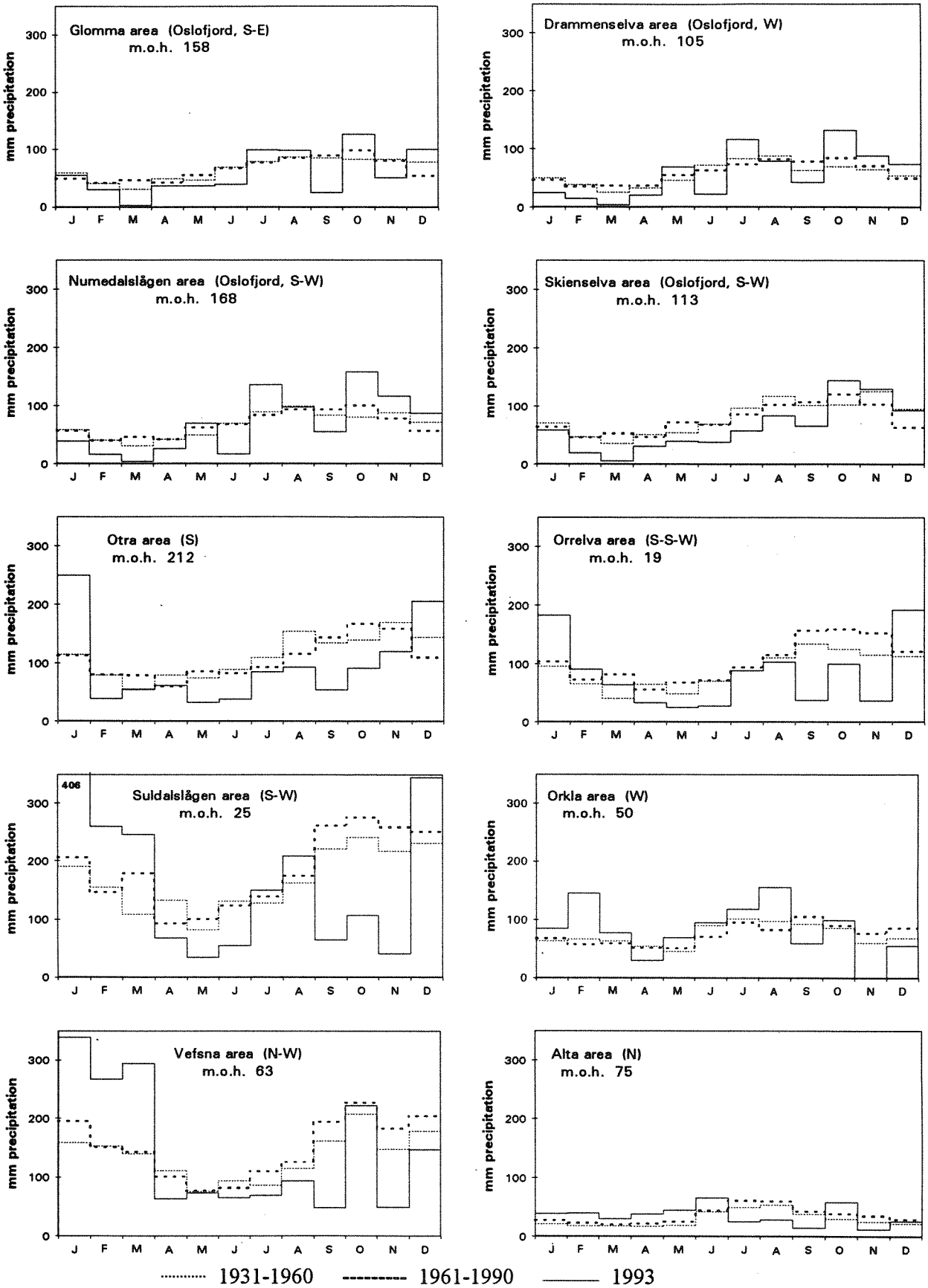

Fig. 5 Monthly Changes in Precipitation (mm/month).
(m.o.h. = meters above sea level)
Source: The Norwegian Meteorological Institute

S = South E = East W = West N = North

3.2.3 Calculation of annual load

The first of the 2 formulas given in the Paris Commission document and the 1990-Report (Holtan et al., 1991) was used for calculating loads for all main rivers and most of the larger rivers. The second formula was used where continous records were not available.

For the other rivers, which have been monitored only once, the best available estimates of flow (catchment area multiplied by specific runoff adjusted for deviations from normal precipitation) and flow- weighted concentrations have been used to estimate contaminant loads.

Drainage basins to the different areas and regions (km² and per cent) is shown in Table 5.

Table 5. **Drainage areas of monitored main and tributary rivers and Down Stream areas (km² and per cent monitored/estimated in each subarea and subregion).** (Fig. 1, Figs. I.I-I.V, Report B)

Discharge-/ sub-regions	Sub-areas	Drainage area of monitored rivers km²		Down Stream areas km²	Total km²	Monitored %
		Main	Tributary			
Skagerrak	No. 1: Glomma	41218	2389	2416	46023	94.8
	" 1: Inner Oslofjord		959	342	1301	73.7
	No. 2: Drammenselva	17028	226	320	17614	98.2
	No. 3: Numedalslågen	5513	1043	631	7187	91.2
	No. 4: Skienselva	10348	1200	1283	12831	90.0
	No. 5: Otra	3730	9109	904	13743	93.4
Total		77837	14966	5896	98699	94.0
The remaining	No. 6: Orre	105	7233	2513	9851	74.5
North Sea	No. 7: Suldalslågen	1466	16205	12681	30352	58.2
Total		1571	23438	15194	40203	62.2
The Norwegian	No. 8: Orkla	2872	28118	16844	47834	64.8
Sea	No. 9: Vefsna	4113	23907	18850	46870	59.8
Total		6985	52025	35694	94704	62.3
The Barents Sea	No. 10: Alta	7367	45155	20619	73141	71.8
TOTAL		**93760**	**135584**	**77403**	**306747**	**74.8**

3.3 Methodology for assessment of direct discharges to marine waters

As the methodology for assessing direct discharges to marine waters is outlined in the 1990-Report (Holtan et al., 1991), and the same procedure is adopted for 1993, we refer to the above mentioned document for further information on this matter.

3.3.1 Waste water treatment plants/sewage effluents

The Central Bureau of Statistics (SSB) and SFT have jointly initiated annual registration of data from all waste water treatment plants in the country with a capacity of more than 50 population units (p.u.*). The data are updated each year by the County Environmental Agencies. In Eastern and Southern Norway a large share of the municipal waste water is purified in "high grade" plants. These areas, as well as Sør-Trøndelag, are also the areas with the highest hydraulic capacity per inhabitant. For example, the plants serving Oslo/Akershus have a capacity of more than 1.5 p.u. per inhabitant. In Hordaland and northwards along the coast the greater part of the waste water is purified mechanically. Of a total of 1680 waste water treatment plants in Norway, 13 have a hydraulic capacity of more than 50000 p.u. These plants account for almost half the total registered hydraulic capacity and load. Only 2 of these large plants are based on mechanical purification. Fjords are the recipients of the discharges from about 65 per cent of the total capacity of the plants (SSB, 1994).

Preferably, the annual loads from sewage effluents have been estimated as the product of annual flow and flow-weighted concentrations, which in particular has been the case for the sewage plants situated in the Skagerrak area (i.e. the area involved in the North Sea Agreement).

For the rest of the municipal wastewater, the loads were estimated by multiplying the number of people with the coefficients listed.

For crude (untreated) sewage discharges, PARCOM (10/3/2-E, 1988), has recommended the following derived per capita loads to be used for nutrients:

	PARCOM:			NORWAY:		
BOD	0.063	kg	O/person/day	0.046	kg	O/person/day
COD				0.094	kg	O/person/day
TOC				0.023	kg	/person/day
SPM	0.063	kg	/person/day	0.042	kg	/person/day
Total N	0.009	kg	N/person/day	0.012	kg	N/person/day
Total P	0.0027	kg	P/person/day	0.0017	kg	P/person/day

* p.u. (population units) is the number of permanent residents plus the number of population equivalents (next page) in an area.

The Norwegian coefficients are based on recent studies of Norwegian sewerage districts. These data are also used to calculate pollutional loads from the different treatment plants, reduced by the removal efficiency of the treatment plants. Municipal sewage also includes a portion of industrial effluents. The fraction of the total person equivalents (p.e.) is proportioned between sewage and industrial wastewater according to the number of persons and the size of industrial effluents connected to each treatment plant.

For metals in sewage discharges the calculated loads are based on measured concentrations and flows in larger treatment plants in the Oslo part of the Glomma area. Metal inputs from the rest of the country are estimated from local knowledge (*) as follows:

Substance	Cu	Zn	Cd	Pb	Cr-T	Ni	Hg
mg/person-equivalent/day (p.e.)	30	35	0.2	1.0	2.9	5.0	0.10

The coefficients used in 1993 are the same as those used for calculations in 1992. The coefficients are based on the results of an investigation on this topic launched by SFT (1993), i.e. monitoring at different types of treatment plants especially in the Oslo part of the Glomma area. Measured/estimated loads from sewage are shown in Appendix II, Report B.

Sources: Knutzen and Øren (1983), Myhrstad (1985), OVA (1994), SFT (1993), VEAS (1994),

3.3.2 Industrial effluents

Sampling frequency for industrial wastewater varies from weekly mixed samples to samples taken at random, but at least twice a year. Measured and estimated loads from industrial activities in the different areas are shown in Appendix III, Report B. According to SFT about 90 per cent of the industrial discharges (i.e. of the substances in question) are included in the total, and probably more for Total-P and Total-N.

3.3.3 Other inputs

(nutrients in area runoff from "Down Stream areas" of main and tributary rivers and rivers not monitored)

The pollution load model calculates the load from each pollution source by using area and activity specific load coefficients multiplied by areas (in square kilometres) of different categories and activity numbers, eg. population (Holtan and Åstebøl, 1990). The coefficients used are prepared according to precipitation, climate, vegetation and soil in the different areas.

To estimate load from agricultural land area runoff, coefficients in the range of 50-200 kg Total-P and 2000-6500 kg Total-N km²/year are used depending on point sources, location of the agricultural land in relation to major tributaries, and agricultural production intensity. Load from upland (remote unpolluted) areas were estimated by using export coefficients in the range of 4-6 kg Total-P and 200-600 kg Total-N km²/year. The highest values were used in areas most affected by long range pollution (acid rain) along the Southern and Western coast. The coefficients are based on mean annual runoff for the period 1931-60.

Total direct nutrient discharges (Down stream areas) are shown in Table I (Appendix I, Report B), in the different subareas (1-10) in Appendix VI, Report B. Direct discharge areas (km²) are shown in Table 5.

4. RESULTS AND DISCUSSION

4.1 Pollutants

Norwegian watercourses, coastal fjords and sea areas are recipients of various substances discharged from many different sources. The discharges may have widely different impacts of varying severity. SFT (Rensvik, 1990) considers that the most serious problems are connected to eutrophication (nutrient effluents and runoff), discharges of metals and organic micropollutants and acidification of water and soil.

In this investigation riverine and direct inputs of nutrients (P- and N-compounds), heavy metals, lindane and PCBs are measured or estimated. In addition to these contaminants the water is polluted by dissolved organic matter, especially from the pulp and paper industry and from municipal sewage, which also has been taken into account in this investigation.

SFT (Rensvik, 1990) has given first priority to eliminating the effluents of 13 of the substances classified as micropollutants, which are in use in Norway, as quickly as possible. Most of this pollution comes from industry, but other sources are the municipal sewerage network, landfill leachate, and pesticide residues from agriculture.

Pollution by heavy metals is either due to discharges from industry, discharges from existing and abandoned mines, leaching from landfills polluted ground or atmospheric fallout. The municipal sewerage network is the source of several heavy metals. Long- range transboundary air pollution is another source of pollution both with respect to heavy metals and organic micropollutants.

Polychlorinated biphenyls (PCBs) are present in different industrial effluents and also released from discarded electrical equipment containing PCBs (e.g. transformer oil), when such equipment is unsatisfactorily stored or destroyed by incineration. There is no enterprise in Norway discharging PCBs regularly.

Major sources of phosphorus and nitrogen pollution are considered to be municipal sewage, agriculture and to a less degree, industry.

4.2 1993-results and discussion

The results given for riverine inputs (main rivers and tributaries) and discharges entering directly into marine recipients, are mainly based on monitoring data (paragraph 3.3).

Measured concentrations of the chemical parameters of the ten main rivers (1993), mean values, standard deviation and range are listed in Appendix VII, Report B. In the case of Cd, Pb, Hg and the different congeners of PCBs, where most of the rivers had concentrations below the respective detection limits, the concentrations are statistically treated as "limit-values". Total annual loads of the main rivers 1993 are shown in Appendix IV, Report B. Annual loads of nutrients and S.P.M. are also presented in Fig. 6. Total annual loads of the tributaries are shown in Appendix V, Report B. For the whole country, total annual loads (Direct discharges and Riverine inputs) are shown in Table I (Appendix I, Report B) and for the four subregions in Tables 1.1-1.4 (Appendix I, Report B), nutrients and S.P.M. also in Fig. 7.

As in 1990 -1992 the greatest emphasis with regard to accuracy has been given to the input estimate of the Skagerrak region, as this is considered the most susceptible part of the North Sea. The Skagerrak reception of total loads in 1993 were 28 per cent of the phosphorus and 37 per cent of the nitrogen yield.

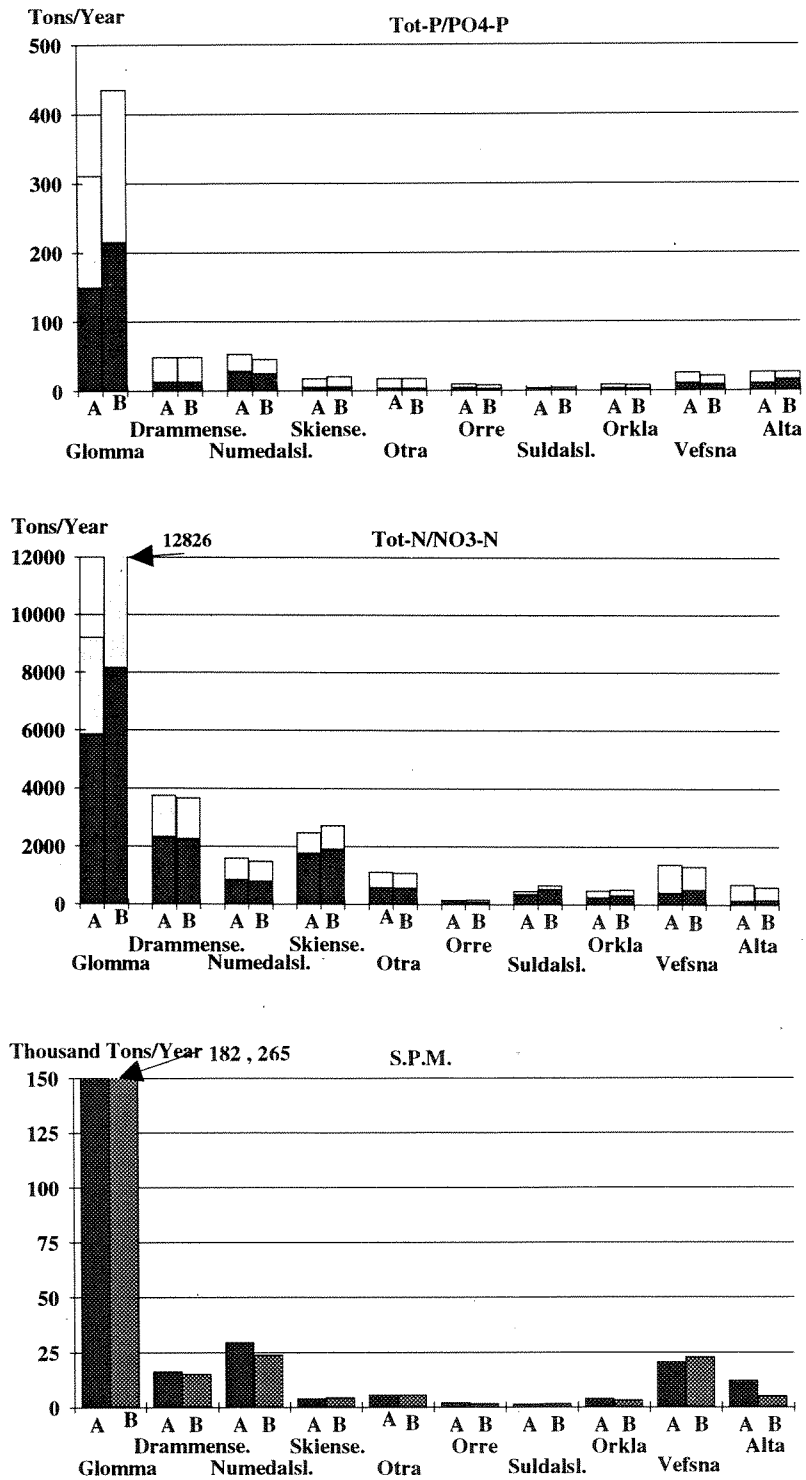

Fig. 6 Main rivers. Nutrients and S.P.M. Total loads 1993 (A) and Total normalized loads (B) in the different rivers.

Whole columns = Total P / N / S.P.M.
Dark hatching = Phosphates / Nitrates

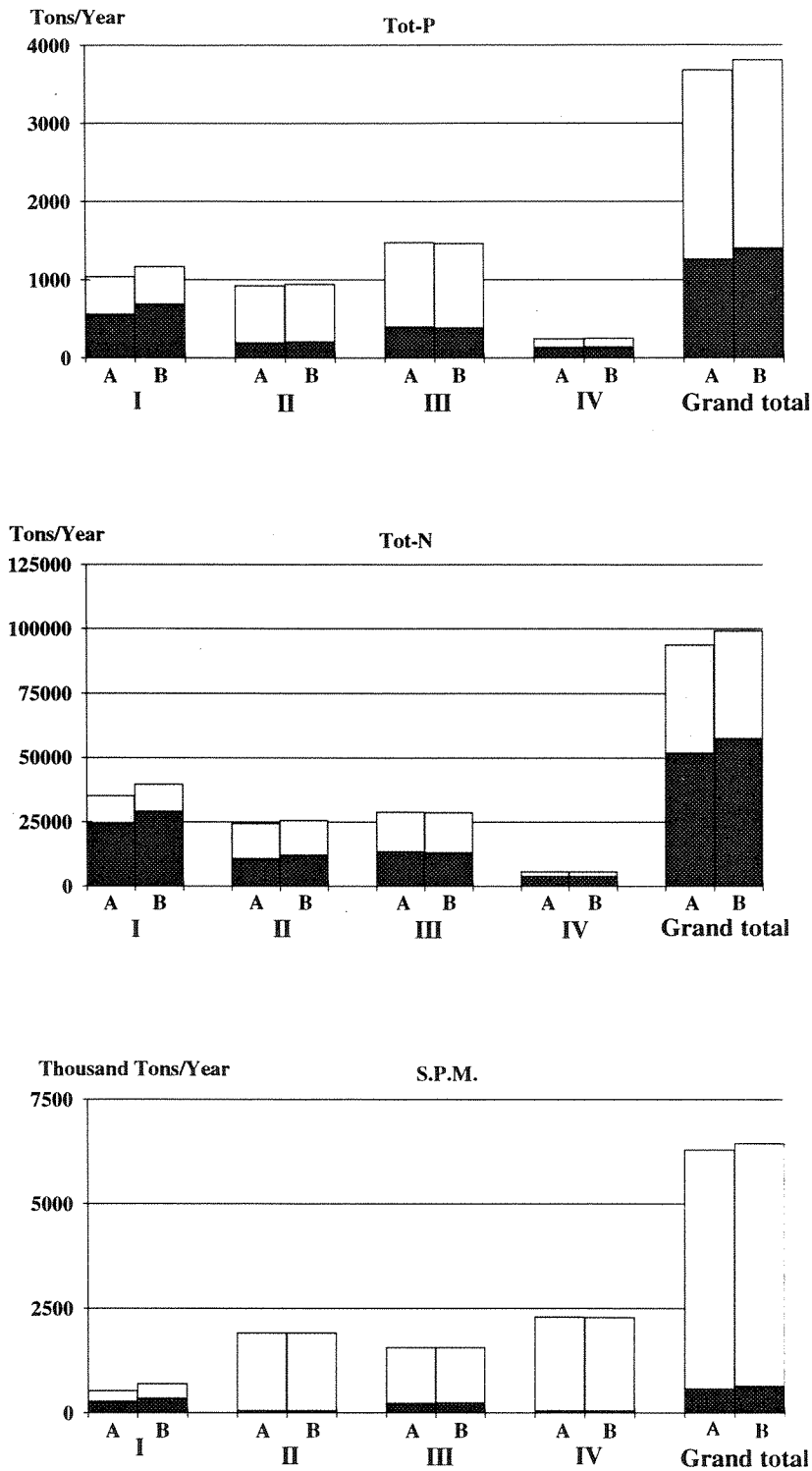

Fig. 7 Nutrients and S.P.M. Total and river discharges 1993 (A) and Total normalized loads (B) from mainland Norway to convention waters and the four subregions: I: Skagerrak, II: The remaining North Sea, III: The Norwegian Sea, IV: The Barents Sea.

Whole columns	= Grand total
Light hatching	= Direct discharges
Dark hatching	= Main and tributary rivers

In this region where 94 per cent of the area is river-monitored, more than 50 per cent of the P-load and 70 per cent of the N-load were found in the riverine inputs.

According to the results from the 1993 investigation, total annual nutrient load to coastal waters from landbased Norwegian sources, is approximately 3679 tons of phosphorus and 93809 tons of nitrogen (Fig. 7). About 34 per cent of the phosphorus and 55 per cent of the nitrogen yield were inputs from the monitored rivers and tributaries. The largest inputs of heavy metals were of copper and zinc, which in 1993 amounted to about 273 and 905 tons, of which 88 and 92 per cent respectively, were river monitored (Fig. 8).

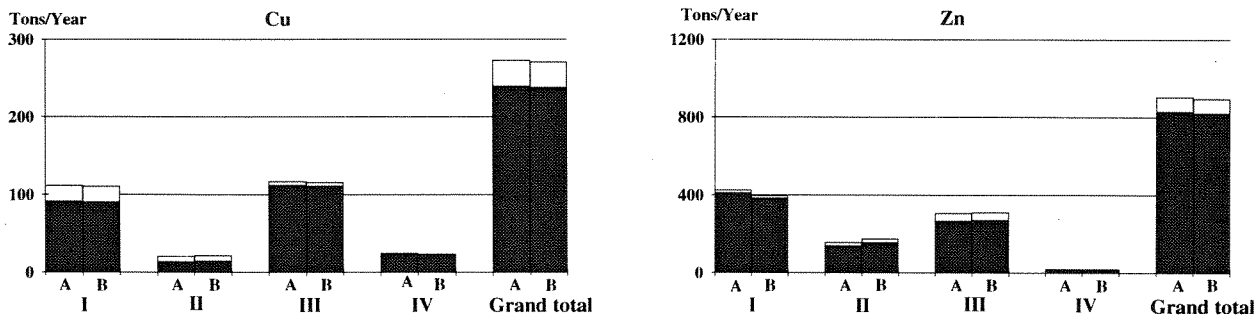

Fig. 8 Cu and Zn. Total and river discharges 1993 (A) and Total normalized loads (B) from mainland Norway to convention waters and the four subregions:
I: Skagerrak, II: The remaining, North Sea, III: The Norwegian Sea, IV: The Barents Sea
Whole columns = Grand total
Light hatching = Direct discharges
Dark hatching = Main and tributary rivers

Inputs of other metals and micropollutants were low. As the detection limits of the parameters Cd and Pb at the NIVA laboratory were above those requested from PARCOM, all analyses from 1992 and onwards of these substances are analyzed on an ICP-MS-instrument at NILU (paragraph 3.2). Still, a few of the concentrations found for these parameters also in 1993 were below the detection limits. Therefore two quantities have been estimated, one assuming that the true concentration was zero and the other assuming that the true concentration was the limit of detection. This provides maximum and minimum concentrations within which the true estimate will fall. When evaluating inputs these data provide upper and lower boundaries of the estimate.

Inputs of cadmium were measured/calculated to be between 6.9 and 7.1 tons, lead between 55.2 and 55.4 tons, mercury between 366 and 656 kg. The same "below detection limit problem" also applies for the inputs of mercury and PCBs which were measured to be between 1.14 and 40.4 kg. In Fig. 9 the lower and upper loads of these substances in the ten main rivers are presented. The pesticide lindane was found in most analyses, but in small amounts. The findings of this substance in Norwegian rivers are likely due to long range air pollution, as we often find lindane in runoff from areas where the compound has never been used (Olav Lodhe, State Plant Protection Agency, pers. comm.). Total load is estimated to about 87 kg.

In most areas the riverine inputs, both of nutrients and S.P.M , were a little lower in 1993 than the year before, mainly due to lower precipitation/runoff (paragraph 4.3).

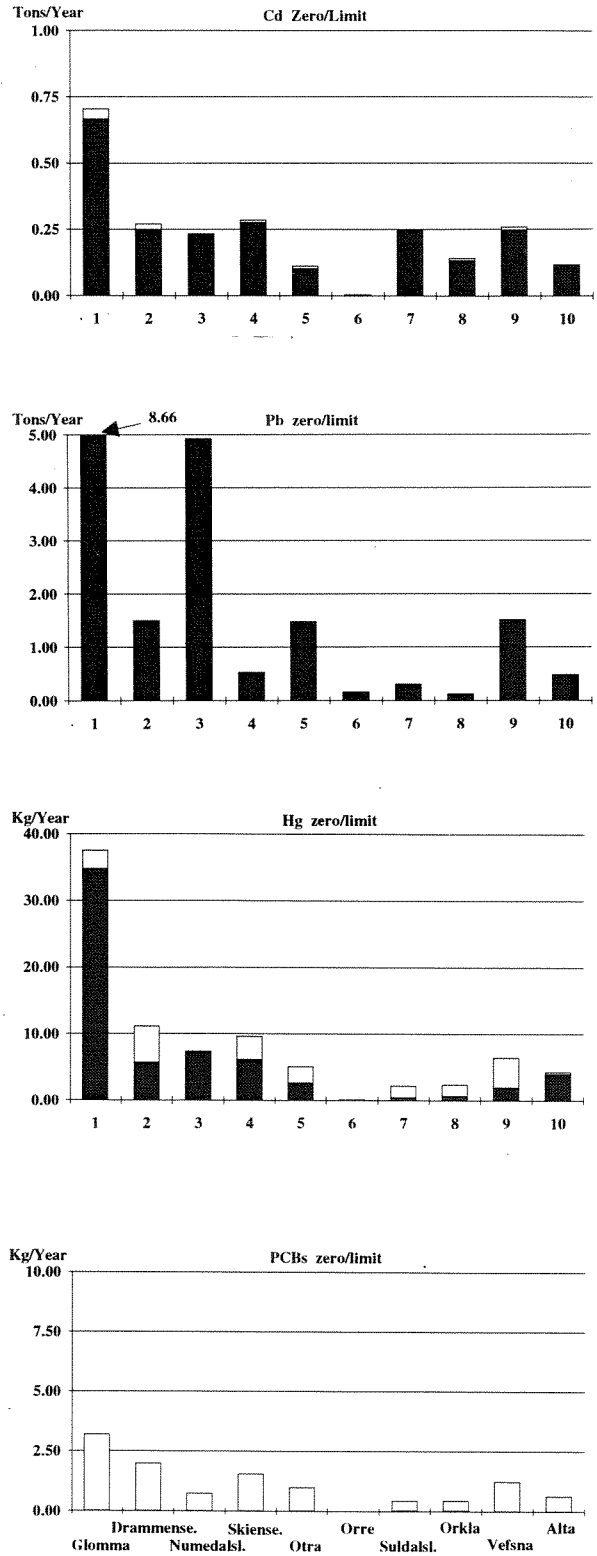

Fig. 9 Main rivers. Cd, Pb, Hg and PCBs. Total loads of the different rivers 1993 (lower and upper boundaries for the estimates).

Whole columns = upper boundary for the estimate
Dark hatching = lower boundary for the estimate

4.3 Mean annual runoff (1931-60, 1961-90) and "mean load"

As mentioned (3.2.2) mean annual runoff for the last LTA-period (1961-90) has been estimated (fig. 2). For most main rivers the mean runoff 1961-90 is lower or in the same level as the 1931-60-period. However, these values are preliminary and may be adjusted when edited and published by NVE. As for precipitation, new normals were published last year.

Compared to Riverine Inputs to Marine Waters in 1990 - 1992, most calculated mean concentrations were in about the same level in 1993. Total flow for Glomma, Orreelva, Suldalslågen and Alta, and accordingly the calculated loads for most of the substances were lower in 1993 than the year before. As for the other main rivers, total flow was higher, with higher calculated loads for most substances as a result.

Annual variations in precipitation/runoff, erosion and seasonal activities of man in the drainage basins, strongly influence the mass transport in the watercourses. The transport values may vary considerably from one year to another. These variations are complicating the estimation of "normal transport values" i.e. mass transport in a "normal" year. Fig. 10 illustrates variations in annual runoff for the ten main rivers in 1985, 1990-1993, and annual variations in total discharge, of the nutrients total N and P for the same years.

In order to adjust the 1993 transport values to a "normal year", approximation have been made by multiplying weighted mean concentrations by mean runoff (LTA, 1961-90) - to normalize the concentrations is not possible. "Mean-values" (normals) for the ten main rivers and tributaries are given in Appendix X, Report B, where also total discharges to the sub regions are shown. In Fig. 6 - 7 the "normalized" nutrient transport values are compared with 1993-values.

During a normal winter the upland area of Norway together with the eastern part of the country show very little runoff. The frozen soil and snowcover protect vegetation and surface soil from erosion. But with the mild winters (1990-1993), soil especially in plowed field is exposed to more frequent and larger flood erosion also during the winter (eg. Glomma).

From experience we have learned that the product of weighted concentrations and mean runoff gives a relatively good estimate of the mass-transport in rivers, especially for the large rivers, and those not considerably exposed to erosion-material. In 1993 annual precipitation varied about normal or were a little lower in all parts of the country (Fig 3). On an annual basis also runoff varied about normal or were lower in most of the Southern and Western Norway, but were somewhat higher in the rest of the country. As for the Glomma area the lower runoff probably is mainly due to the cold autumn/early winter with precipitation as snow in October-December. Further North, especially in parts of the Vefsna and Alta areas the autumn temperature was higher than normal. As for rivers in this part of the country, annual runoff was higher than normal, and accordingly also the mass- transport. The river Suldalslågen is recently regulated and has now considerably less annual water discharge than in the normal period (1931-60).

4.4 Nutrient retention in fjords

Both phosphorus and nitrogen retention in watercourses is taken into account in the calculation of the Norwegian contribution to marine pollution, but in a conservative way. However, no corrections are so far made for retention in fjords and other marine areas.

Considering the nutrient input to the open marine waters, one should also take into account retention in fjords, at least in well defined treshold fjords. As a result of high salinity compared to freshwater, marine waters have better conditions for sedimentation than lakes. For example clay settles very poorly

in lakes, but very efficient in fjords. In addition to temperature stratification, fjords also show salinity stratification, with light brackish water on top of heavier, saline waters. Thus the over all stratification in fjords is in most cases stronger than in lakes. This implies that particulate pollutants lost to deep waters by sedimentation have less chance to be brought back to the plankton producing layer than in lakes.

In addition, stronger stratification implies greater chance for oxygen depletion in deep waters, which in fact is seen in many sheltered Norwegian fjords. Theoretically this will improve the conditions for denitrification. However, this greater stability is often reduced by rougher physical conditions in fjords compared to lakes.

Retention in Norwegian fjords is very poorly studied by direct budget measurements. In the Drammensfjord Magnusson and Næss (1986) found that about 60% of the incoming phosphorus was retained in the fjord, while for nitrogen the retention was only about 15%. In the silled Inner Oslofjord preliminary calculations indicate that nitrogen retention is in the order of 30-50% (Baalsrud, K., and B. Bjerkeng, 1991).

Thus, nutrient retention in treshold fjords seems to be of the similar magnitude as we find in lakes, and it is likely to believe that retention can be estimated from the same type of models that applies for lakes. The general lack of calibration data on retention models in fjords implies that we find it to early, at this stage of knowlege, to include these correction in the Norwegian discharge budget. It should be kept in mind, however, that a significant part of the particulate pollutants, and pollutants with particle affinity, end up in fjord sediments and thus are prevented from reaching the coastal waters.

4.5 Long term concentration data

At the sixteenth joint Meeting of the Oslo and Paris Commission (OSPAR 16/4/8-E, 1994) it was decided that where data exist, countries should present long term concentration data on rivers in the 1993-report.

In this report we have managed to present mean annual values from three of the main rivers, mainly nutrients, from Glomma (1978-1989), Otra (1980-1989) and from Orkla (1974-1989) also metal concentrations (table 7B.1-3, Report B).

We hope to be able to give this information also from the other main rivers in the 1994-report.

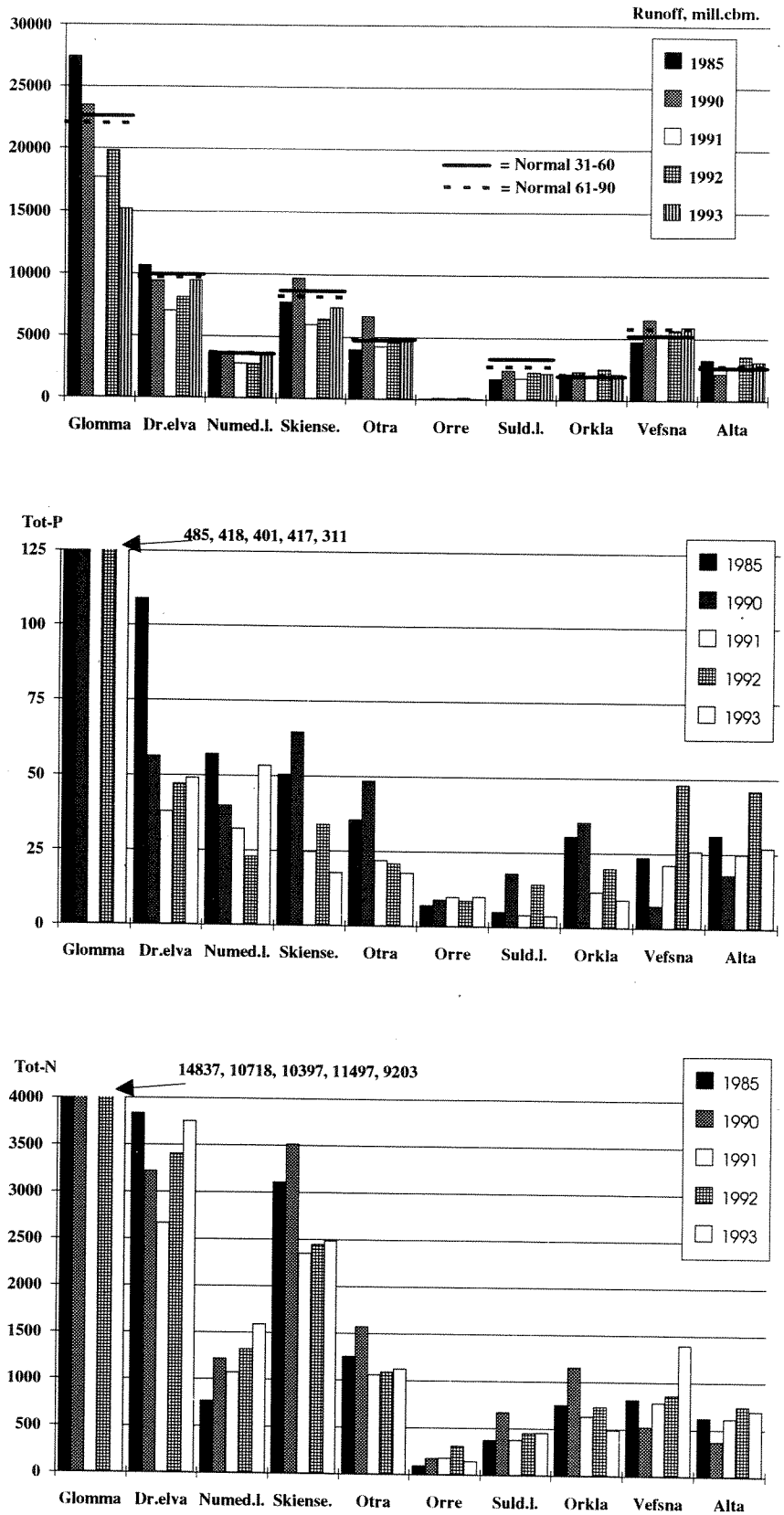

Fig. 10 Main rivers. Annual runoff and nutrient load in 1985, 1990-93.

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5.1 Project Personnel

At NIVA:

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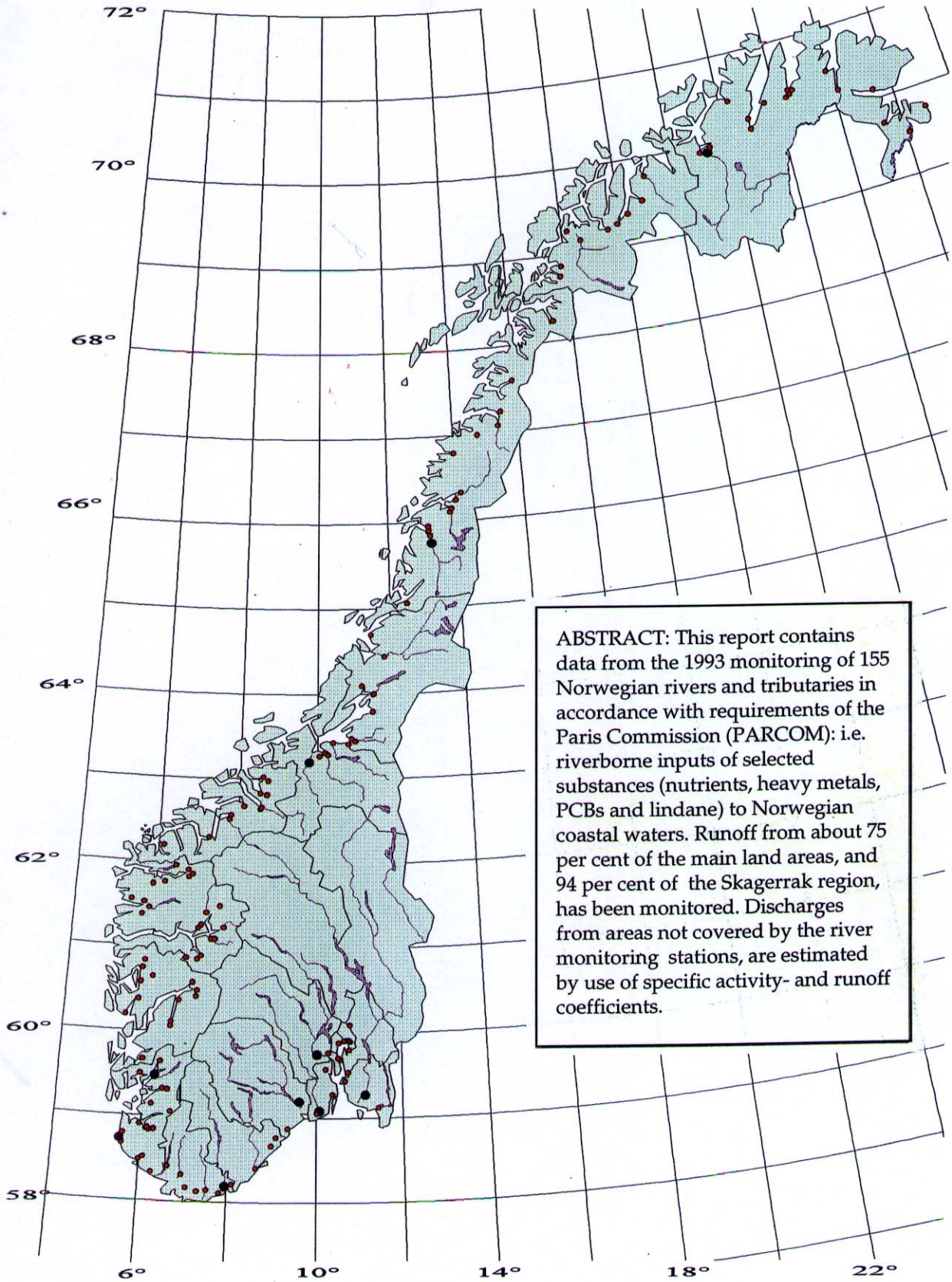
B Data report



ABSTRACT: This report contains data from the 1993 monitoring of 155 Norwegian rivers and tributaries in accordance with requirements of the Paris Commission (PARCOM): i.e. riverborne inputs of selected substances (nutrients, heavy metals, PCBs and lindane) to Norwegian coastal waters. Runoff from about 75 per cent of the main land areas, and 94 per cent of the Skagerrak region, has been monitored. Discharges from areas not covered by the river monitoring stations, are estimated by use of specific activity- and runoff coefficients.

CONTENTS Page:

(1) Glomma "tributaries"		: Tista	- Hølenelva
(1) Inner Oslo-fjord		: Årungelva	- Åroselva
(2) Drammenselva	"tributary"	: Lierelva	
(3) Numedalslågen	"tributaries"	: Sandeelva	- Farriselva
(4) Skienselva	"tributary"	: Tokkeelva	
(5) Otra	"tributaries"	: Gjerstade.	- Audna
(6) Orreelva	"tributaries"	: Lygna	- Ulla
(7) Suldalslågen	"tributarties"	: Saudaelva	- Hornindalselva
(8) Orkla	"tributaries"	: Ørstaelva	- Salsvatnelva
(9) Vefsna	"tributaries"	: Åbjøra	- Reisa
(10) Alta	"tributaries	: Mattiselva	- Grense Jacobse.

FIGURES:

CONVENTION FOR THE PREVENTION OF MARINE POLLUTION FROM LANDBASED SOURCES
QUESTIONARY ACCORDING TO THE TENTH MEETING OF THE PARIS COMMISSION LISBON 15 - 17 JUNE 1988.

The purpose of this form is to provide the Commission, in accordance with Article 17(B) of the Paris convention, with an assessment of the waterborne inputs to Convention waters.

The form should be completed for each calendar year in retrospect and submitted to the Secretary by June following the year to which the data relate.

The information sought relates to inputs through direct discharges (questions 7 - 13) and riverine inputs (questions 14 - 19).
Some information on discharges other than those mentioned below are also attached (question 20).

Separate forms for the four single areas are filled in.

(1) THE COUNTRY IS NORWAY

(2) LENGTH OF COASTLINE INCLUDING FJORDS AND BAYS IS 21347 KM

(3) NATURE OF THE RECEIVING WATER IS COASTAL

APPENDIX I : TOTAL DISCHARGES (Paragraph 4 - 6) **Page:**

Table I TOTAL DISCHARGES from MAINLAND NORWAY to convention waters 1993 (Fig. I).

Substance:	Area runoff	Direct Discharges	Tributary Inputs		Main Riverine Inputs		Grand Total	
Cadmium		0.4	4.2	*	2.3	*	6.9	tonnes
Cadmium			4.3	**	2.4	**	7.1	tonnes
Mercury		154	142	*	63	*	360	kg
Mercury			205	**	86	**	445	kg
Copper		34	111		128		273	tonnes
Zinc		78	429		399		905	tonnes
Lead		10.1	25.5	*	19.6	*	55.2	tonnes
Lead			25.6	**	19.7	**	55.4	tonnes
Arsenic		0.5	8.3	*	9.8		18.7	tonnes
Arsenic			8.4	**			8.4	tonnes
Cr-T		5.1	146.2	*	32.6	*	183.9	tonnes
Cr-T			146.2	**	32.6	**	183.9	tonnes
Ni		24.6	90.8	*	42.6	*	133.4	tonnes
Ni			90.9	**	42.6	**	158.1	tonnes
PCBs ***			1.10	*	0.05	*	1.14	kg
PCBs			29.1	**	11.3	**	40.4	kg
gamma-HCH			51		37		87	kg
NH4-N	1726	11302	1668		897		15593	tonnes
NO3-N	15085	184	15209		12510		42989	tonnes
PO4-P	206	762	195		226		1388	tonnes
Total N	24158	17915	30404		21333		93809	tonnes
Total P	783	1638	732		526		3679	tonnes
S.P.M.		5169179	285550		276833		5731561	tonnes
TOC		17970	137331		170887		326189	tonnes
COD		245399					245399	tonnes
BOD		40830					40830	tonnes
AOX		293					293	tonnes

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

***** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180**

Table 1.1 TOTAL DISCHARGES to The Skagerrak Region 1993 (Fig. I.I).

The Skagerrak Region with main rivers (1) Glomma, (2) Drammenselva, (3) Numedalslågen, (4) Skienselva, (5) Otra

Substance:	Area runoff	Direct Discharges	Tributary Inputs		Main Riverine Inputs		Grand Total	
Cadmium		0.09	0.9	*	1.5	*	2.5	tonnes
Cadmium			0.9	**	1.6	**	2.6	tonnes
Mercury		87.30	19	*	56	*	163	kg
Mercury			21	**	71	**	179	kg
Copper		20.74	7		84		111	tonnes
Zinc		15.84	104		304		425	tonnes
Lead		1.01	6.4	*	17.1	*	24.5	tonnes
Lead			6.4	**	17.1	**	24.5	tonnes
Arsenic		0.17	2.87	*	6.2		9.3	tonnes
Arsenic			2.87	**			2.9	tonnes
Cr-T		3.05	10.1	*	22.5	*	35.7	tonnes
Cr-T			10.1	**	22.6	**	35.7	tonnes
Ni		9.71	3.9	*	33.8	*	37.7	tonnes
Ni			3.9	**	33.8	**	47.4	tonnes
PCBs ***			0.11	*	0.00	*	0.11	kg
PCBs			2.5	**	8.5	**	10.9	kg
gamma-HCH			9.4		31		41	kg
NH4-N	181	4894	379		780		6234	tonnes
NO3-N	1824	141	3656		11331		16953	tonnes
PO4-P	19	150	25		197		391	tonnes
Total N	2835	7866	6238		18153		35092	tonnes
Total P	75	410	100		449		1034	tonnes
S.P.M.		15461	21953		236869		274282	tonnes
TOC		6601	35470		132231		174301	tonnes
COD		150174					150174	tonnes
BOD		14092					14092	tonnes
AOX		293					293	tonnes

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

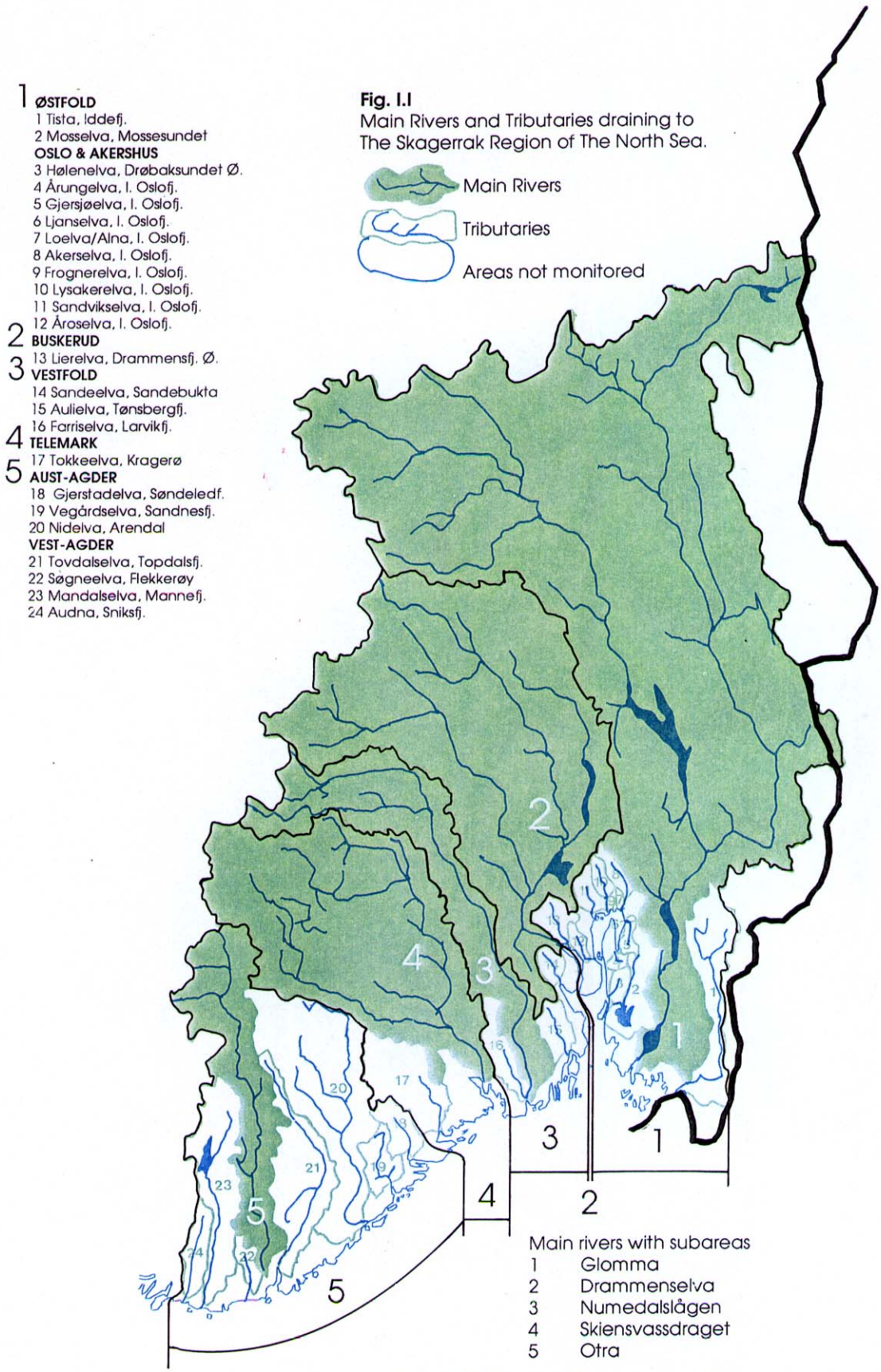


Fig. I.1
Main Rivers and Tributaries draining to The Skagerrak Region of The North Sea.

I North Sea/Skagerrak

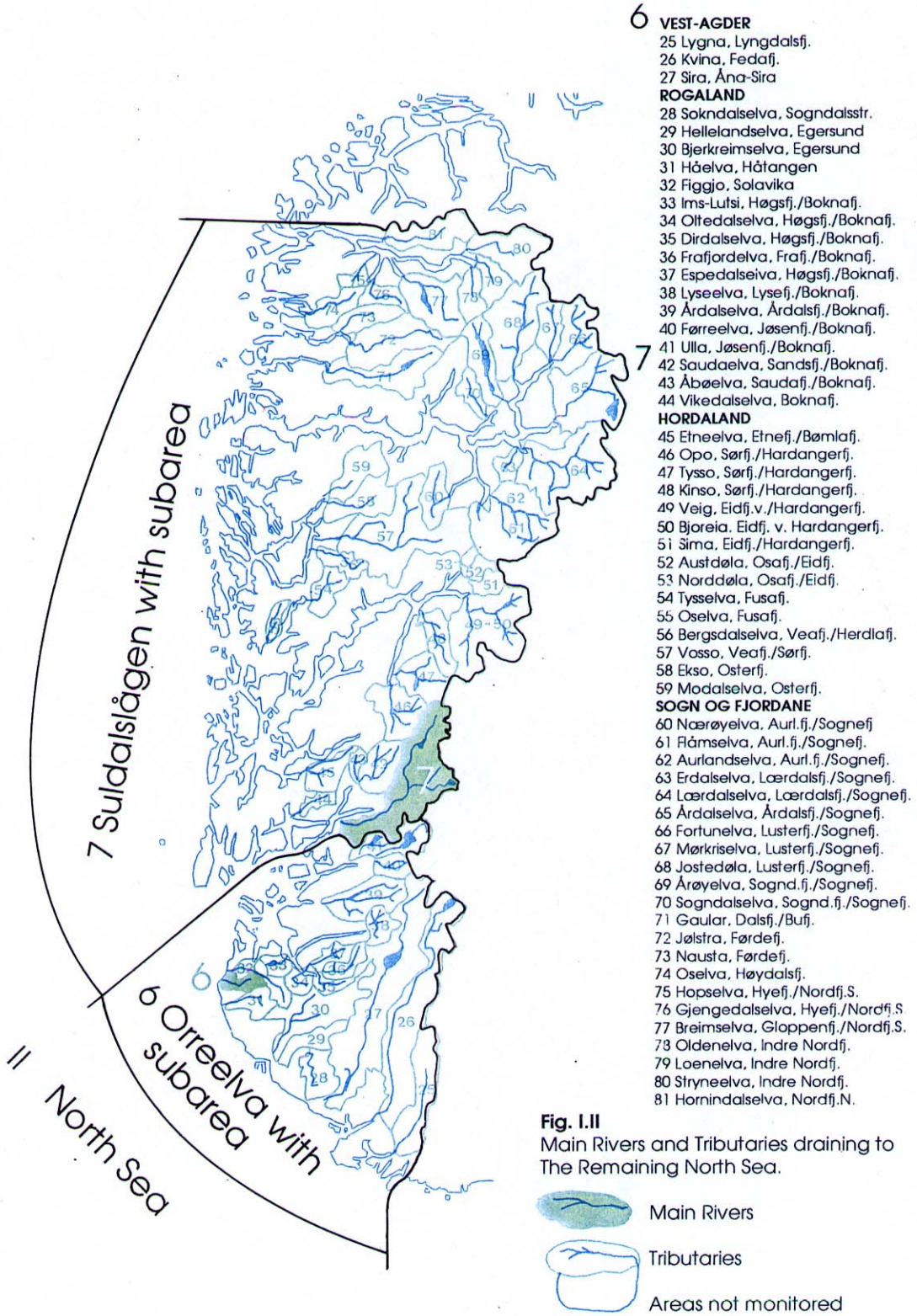
Table 1.2 TOTAL DISCHARGES to The Remaining North Sea 1993 (Fig. I.II).

The North Sea Region with main rivers : (6) Orreelva, (7) Suldalslågen

Substance:	Area runoff	Direct Discharges	Tributary Inputs		Main Riverine Inputs		Grand Total	
Cadmium		0.23	1.0	*	0.2	*	1.5	tonnes
Cadmium			1.1	**	0.3	**	1.6	tonnes
Mercury		46.56	27	*	0	*	74	kg
Mercury			51	**	2	**	100	kg
Copper		7.12	12		1		20	tonnes
Zinc		19.90	129		7		156	tonnes
Lead		8.53	9.2	*	0.5	*	18.2	tonnes
Lead			9.3	**	0.5	**	18.3	tonnes
Arsenic		0.00	4.9	*	0.2		5.1	tonnes
Arsenic			4.9	**			4.9	tonnes
Cr-T		1.46	33.6	*	1.0	*	36.1	tonnes
Cr-T			33.6	**	1.0	**	36.1	tonnes
Ni		13.02	5.1	*	0.5	*	5.6	tonnes
Ni			5.1	**	0.5	**	18.7	tonnes
PCBs ***			0.0	*	0.0	*	0.0	kg
PCBs			8.5	**	0.5	**	8.9	kg
gamma-HCH			14.5		2		16	kg
NH4-N	628	3006	469		13		4117	tonnes
NO3-N	5761	20	6564		421		12766	tonnes
PO4-P	56	261	52		5		374	tonnes
Total N	9300	4443	9956		602		24301	tonnes
Total P	199	541	171		14		926	tonnes
S.P.M.		1822570	37365		3548		1863484	tonnes
TOC		5353	50522		1470		57346	tonnes
COD		36494					36494	tonnes
BOD		12723					12723	tonnes

Measurements below detection limits are treated in two ways :
*) Detection limit = Zero
**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180



6 **VEST-AGDER**
25 Lygna, Lyngdalsfj.
26 Kvina, Fedafj.
27 Sira, Åna-Sira
ROGALAND
28 Sokndalselva, Sogndalsstr.
29 Hellelandselva, Egersund
30 Bjerkreimselva, Egersund
31 Håelva, Håtangen
32 Figgjo, Solavika
33 Ims-Lutsi, Høgsfj./Boknafj.
34 Oltedalselva, Høgsfj./Boknafj.
35 Dirdalselva, Høgsfj./Boknafj.
36 Frafjordelva, Frafj./Boknafj.
37 Espedalseiva, Høgsfj./Boknafj.
38 Lyseelva, Lysefj./Boknafj.
39 Årdalselva, Årdalsfj./Boknafj.
40 Førreelva, Jøsenfj./Boknafj.
41 Ulla, Jøsenfj./Boknafj.
7 42 Saudaelva, Sandsfj./Boknafj.
43 Åbøelva, Saudafj./Boknafj.
44 Vikedalselva, Boknafj.
HORDALAND
45 Etneelva, Etnefj./Bømlafj.
46 Opo, Sørfj./Hardangerfj.
47 Tysso, Sørfj./Hardangerfj.
48 Kinso, Sørfj./Hardangerfj.
49 Veig, Eidfj.v./Hardangerfj.
50 Bjoreia, Eidfj. v. Hardangerfj.
51 Sima, Eidfj./Hardangerfj.
52 Austdøla, Osafj./Eidfj.
53 Norddøla, Osafj./Eidfj.
54 Tysselva, Fusafj.
55 Oselva, Fusafj.
56 Bergsdalselva, Veafj./Herdlafj.
57 Vosso, Veafj./Sørfj.
58 Ekso, Osterfj.
59 Modalselva, Osterfj.
SOGN OG FJORDANE
60 Nærøyelva, Aurl.fj./Sognefj
61 Flåmselva, Aurl.fj./Sognefj.
62 Aurlandselva, Aurl.fj./Sognefj.
63 Erdalselva, Lærdalsfj./Sognefj.
64 Lærdalselva, Lærdalsfj./Sognefj.
65 Årdalselva, Årdalsfj./Sognefj.
66 Fortunelva, Lusterfj./Sognefj.
67 Mørkriselva, Lusterfj./Sognefj.
68 Jostedøla, Lusterfj./Sognefj.
69 Årøyelva, Sognd.fj./Sognefj.
70 Sogndalselva, Sognd.fj./Sognefj.
71 Gaular, Dalsfj./Bufj.
72 Jølstra, Førdefj.
73 Nausta, Førdefj.
74 Oselva, Høydalsfj.
75 Hopselva, Hyefj./Nordfj.S.
76 Gjengedalselva, Hyefj./Nordfj.S
77 Breimselva, Gloppenfj./Nordfj.S.
78 Oldenelva, Indre Nordfj.
79 Loenelva, Indre Nordfj.
80 Stryneelva, Indre Nordfj.
81 Hornindalselva, Nordfj.N.

Fig. I.II
Main Rivers and Tributaries draining to The Remaining North Sea.

Main Rivers

Tributaries

Areas not monitored

Table 1.3 TOTAL DISCHARGES to The Norwegian Sea 1993 (Fig. I.III).

The Norwegian Sea Region with main rivers (8) Orkla, (9) Vefsna

Substance:	Area runoff	Direct Discharges	Tributary Inputs		Main Riverine Inputs		Grand Total	
Cadmium		0.08	1.9	*	0.4	*	2.4	tonnes
Cadmium			1.9	**	0.4	**	2.4	tonnes
Mercury		18.93	70	*	2	*	91	kg
Mercury			101	**	9	**	129	kg
Copper		5.44	76		35		117	tonnes
Zinc		41.41	180		84		306	tonnes
Lead		0.56	9.0	*	1.6	*	11.2	tonnes
Lead			9.0	**	1.6	**	11.2	tonnes
Arsenic		0.33	0.6	*	2.9		3.8	tonnes
Arsenic			0.6	**			0.6	tonnes
Cr-T		0.54	86.6	*	5.8		93.0	tonnes
Cr-T			86.6	**	5.8		93.0	tonnes
Ni		1.84	42.5	*	6.9	*	49.4	tonnes
Ni			42.5	**	6.9	**	51.2	tonnes
PCBs ***			1.0	*	0.0	*	1.0	kg
PCBs			14.7	**	1.7	**	16.3	kg
gamma-HCH			23.4		3		26	kg
NH4-N	825	3250	478		75		4628	tonnes
NO3-N	6490	22	4469		621		11602	tonnes
PO4-P	113	336	106		14		567	tonnes
Total N	10342	5400	11279		1882		28903	tonnes
Total P	421	660	357		35		1473	tonnes
S.P.M.		1116615	197080		24383		1338077	tonnes
TOC		5676	29555		26241		61472	tonnes
COD		57193					57193	tonnes
BOD		13315					13315	tonnes
AOX		1					1	tonnes

Measurements below detection limits are treated in two ways :
***) Detection limit = Zero**
****) Detection limit = Limit**

***** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180**

8 **MØRE OG ROMSDAL**
82 Ørstaelva, Ørstafj.
83 Valldøla, Nordalfj./Storfj.
84 Rauma, Romsdalsfj./Moldefj.
85 Isa, Isfj./Moldefj.
86 Eira, Eresfj./Moldefj.
87 Littledalselva, Sunndalsfj.
88 Driva, Sunnd.fj./Tingvollfj.
89 Ulvåa, Ålvundfj.
90 Toåa, Todalsfj.
91 Surna, Surnadalsfj.
92 Bøvra, Hamnesfj./Halsafj.

SØR-TRØNDELAG
93 Børselva, Gaulosen/Tr.h.fj.
94 Vigda, Gaulosen/Tr.h.fj.
95 Gaula, Gaulosen/Tr.h.fj.
96 Nidelva, Trondheimsfj.
97 Homla, Stjørd.fj./Tr.h.fj.

NORD-TRØNDELAG
98 Stjørdalselva, Stjørdalsfj./Tr.h.fj.
99 Gråelva, Stjørdalsfj./Tr.h.fj.
100 Verdalsvassdr., Tr.h.fj
101 Figga/Leksdalselva, Tr.h.fj.
102 Snåsavassdr., Tr.h.fj.
103 Årgårdselva, Namsfj.
104 Namsen, Namsfj. Ø.
105 Salsvatnelva, Follafj.

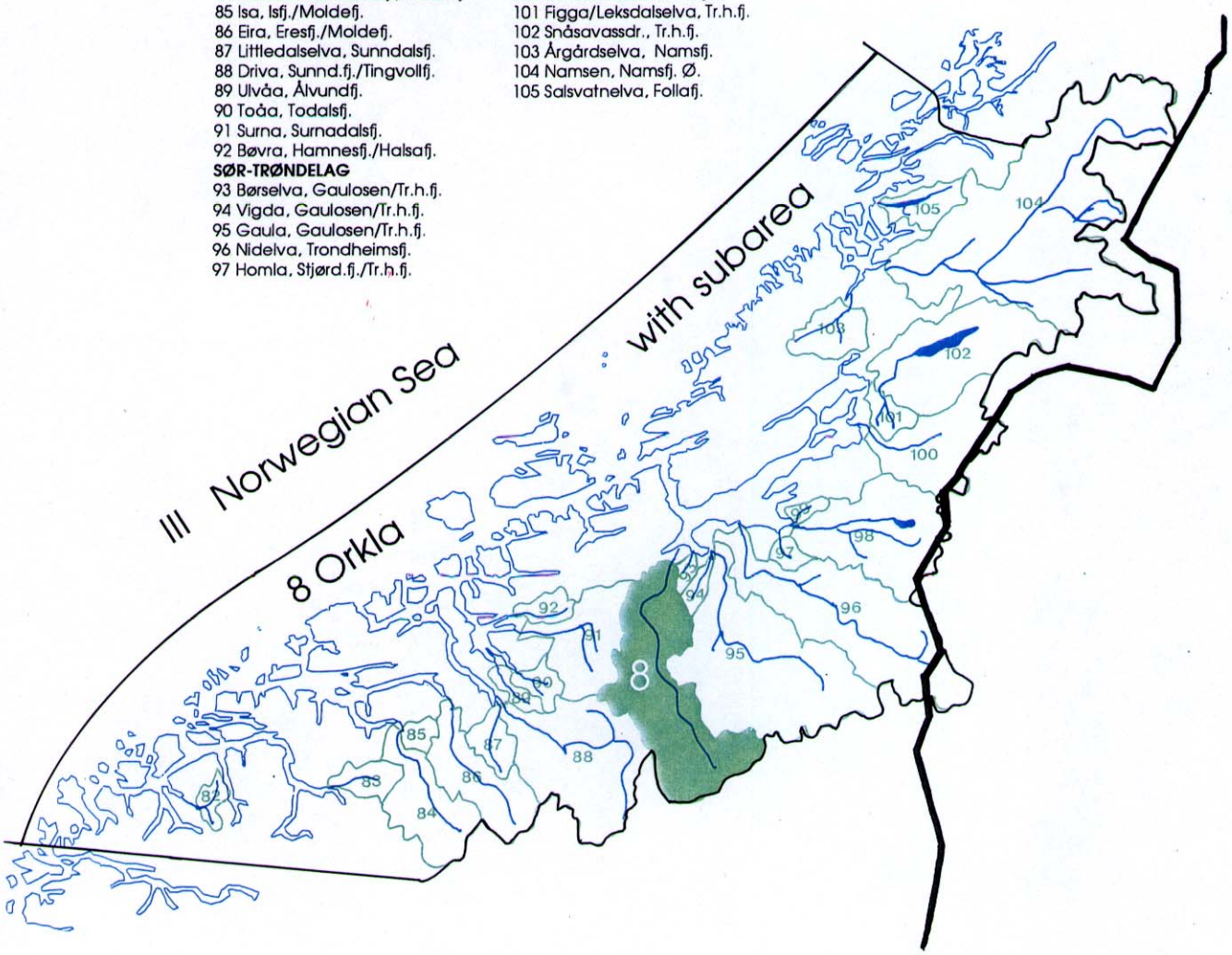


Fig. I.III A
Main Rivers and Tributaries draining to The Norwegian Sea (Southern Part).

Main Rivers

Tributaries

Areas not monitored

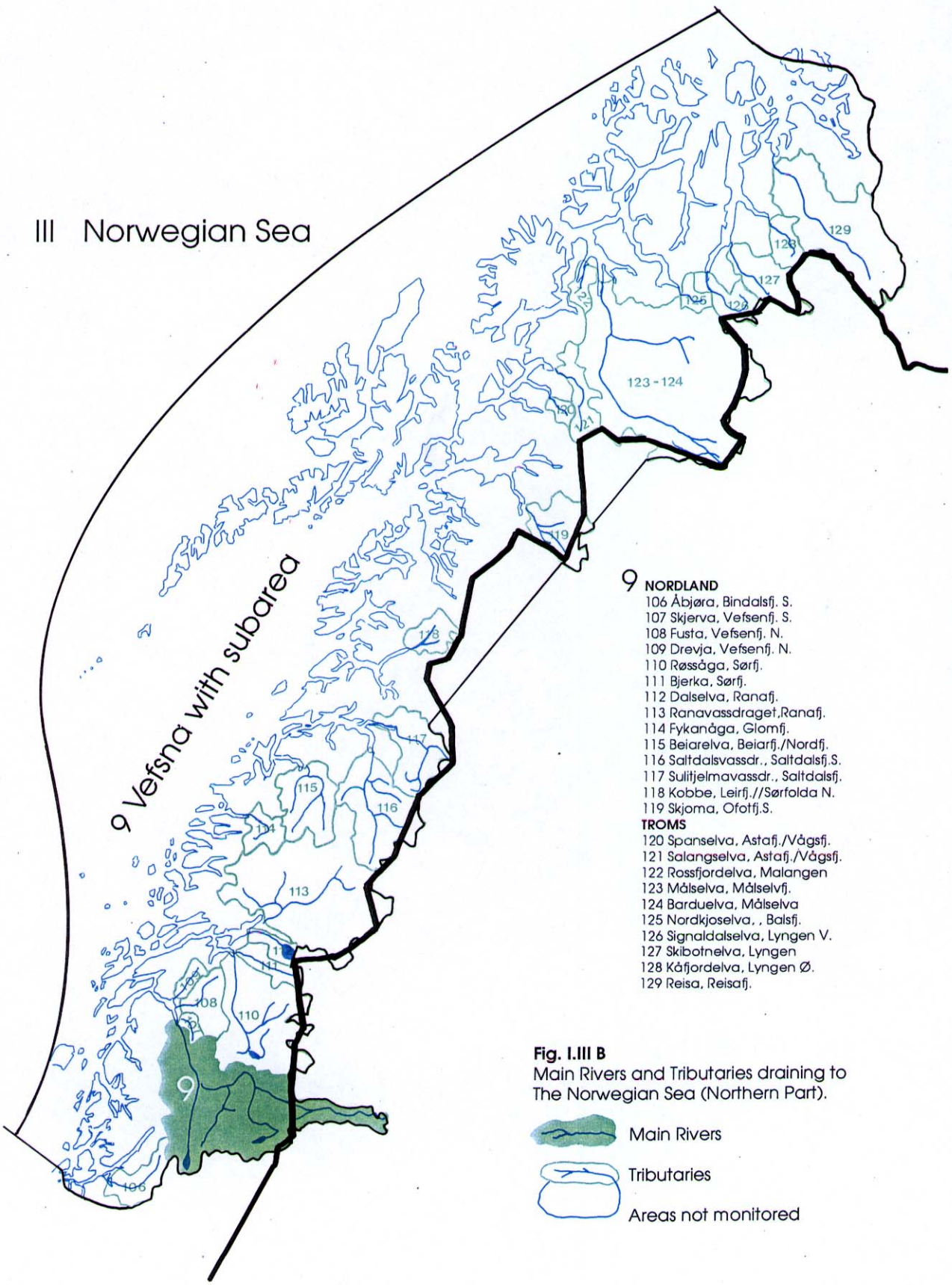


Fig. I.III B
Main Rivers and Tributaries draining to The Norwegian Sea (Northern Part).

Table 1.4 TOTAL DISCHARGES to The Barents Sea 1993 (Fig. I.IV).

The Barents Sea Region with main river (10) Alta

Substance:	Area runoff	Direct Discharges	Tributary Inputs		Main Riverine Inputs		Grand Total	
Cadmium		0.00	0.3	*	0.11	*	0.5	tonnes
Cadmium			0.4	**	0.12	**	0.5	tonnes
Mercury		1.35	26	*	3.94	*	32	kg
Mercury			31	**	4.24	**	37	kg
Copper		0.37	16		7.73		24	tonnes
Zinc		0.43	16		3.22		19	tonnes
Lead		0.01	0.8	*	0.48	*	1.3	tonnes
Lead			0.8	**	0.48	**	1.3	tonnes
Arsenic		0.00		*	0.54		0.5	tonnes
Arsenic				**			0.0	tonnes
Cr-T		0.04	15.9	*	3.17	*	19.1	tonnes
Cr-T			15.9	**	3.17	**	19.1	tonnes
Ni		0.06	39.4	*	1.35	*	40.8	tonnes
Ni			39.4	**	1.35	**	40.8	tonnes
PCBs ***			0.0	*	0.00	*	0.0	kg
PCBs			3.5	**	0.66	**	4.2	kg
gamma-HCH			3.4		0.54		4	kg
NH4-N	91	151.81	342		29.43		614	tonnes
NO3-N	1010	1.01	519		137.18		1668	tonnes
PO4-P	18	15.78	12		9.81		56	tonnes
Total N	1681	204.61	2931		696.15		5512	tonnes
Total P	88	26.81	104		27.04		246	tonnes
S.P.M.		2214534	29152		12033		2255719	tonnes
TOC		340.44	21785		10945		33070	tonnes
COD		1537.28					1537	tonnes
BOD		700.87					701	tonnes

Measurements below detection limits are treated in two ways :
***) Detection limit = Zero**
****) Detection limit = Limit**

***** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180**

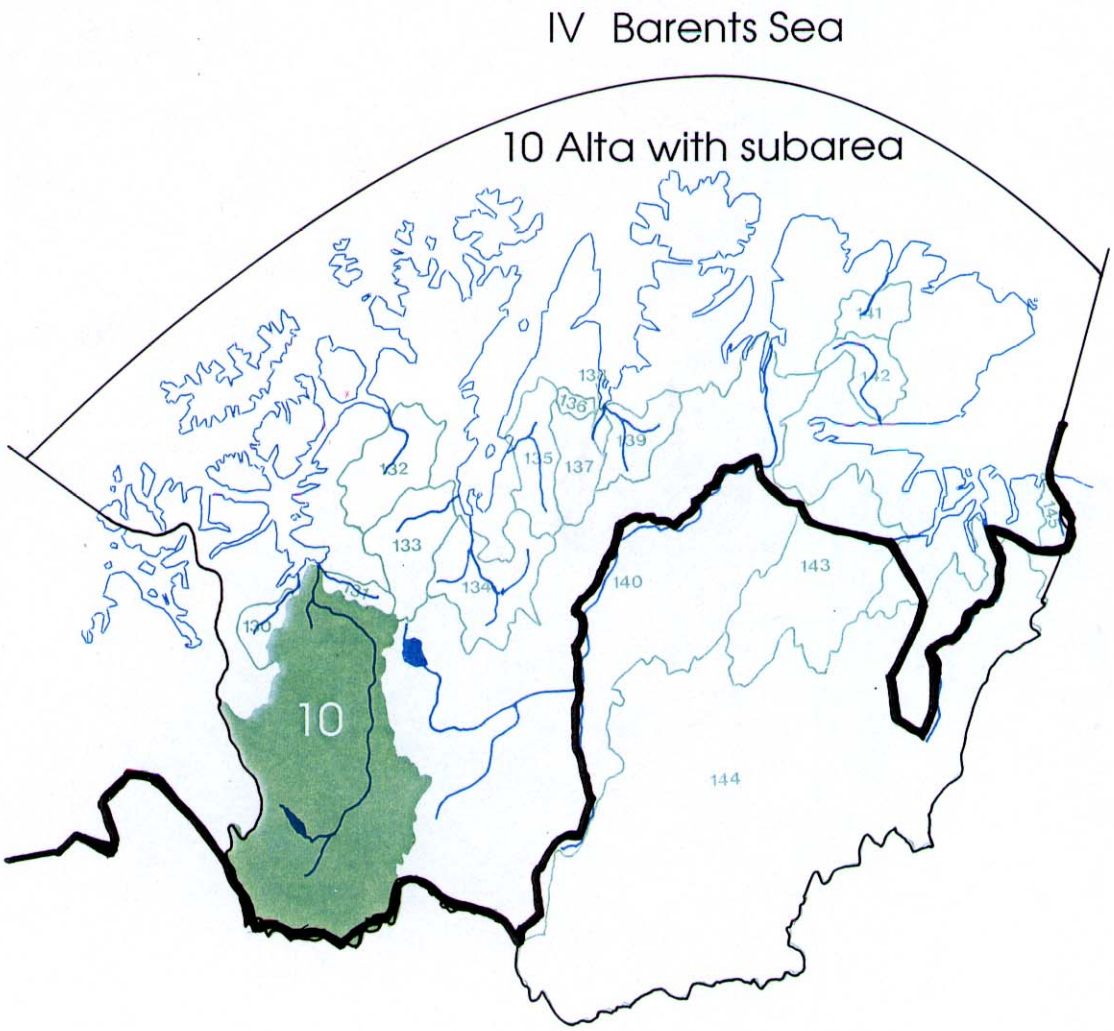


Fig. I.IV
Main Rivers and Tributaries draining to The Barents Sea.

Main Rivers

Tributaries

Areas not monitored

10 **FINNMARK**
130 Mattiselva, Kåfj./Altafj.
131 Tverrelva, Altafj.
132 Repparfjordelva, Repparfj.
133 Stabburselva, I. Porsangen V.
134 Lakselva, I. Porsangen S.
135 Børselva, I. Porsangen Ø.
136 Mattusjåkka, I. Laksefj. V.
137 Storelva, I. Laksefj. V.
138 Soussjåkka, I. Laksefj. V.
139 Adamselva, I. Laksefj. Ø.
140 Tanavassdr., Tanafj. S.
141 Vesterelva, Sylteſj.
142 V. Jakobselv, Y. Varangerfj.
143 Neiden Munkfj./Varangerfj.
144 Passvikelva, Bøkfj./Varangerfj.
145 Grense Jakobselv, Varangerfj.

APPENDIX II : SEWAGE EFFLUENTS FROM DOWNSTREAM AREAS OF MAIN AND TRIBUTARY RIVERS AND RIVERS NOT MONITORED 1993 (Paragraph 7 - 8) **Page:**

Paragraph 7: Sewage effluents ./.

Paragraph 8: Measurements of calculation used - including information on the concentration upon which the measurement is based:

Paragraph 3.3 (Report A, 1991, 1992 - 1994)

Municipal sewage includes a portion of industrial effluents

Table II Sewage Effluents from down stream areas of mainland Norway to convention waters (1993).

Total quantity of substance discharged per year:

Regions:	I	II	III	IV		
	The Skagerrak	The North	The Norwegian	The Barents	Sum	
Substance:	Region	Sea	Sea	Sea		
Cd	74	40	34	2	151	kg
Hg	84	22	19	1	127	kg
Cu	12.4	6.0	5.2	0.4	24.0	tonnes
Zn	14.0	7.0	6.0	0.4	27.5	tonnes
Pb	706	201	172	12	1092	kg
Cr-T	3.0	0.6	0.5	0.0	4.1	tonnes
Ni	7.1	1.0	0.9	0.1	9.0	tonnes
PCBs						kg
gamma-HCH						kg
NH4-N	4894	3006	3250	152	11302	tonnes
NO3-N	141	20	22	1	184	tonnes
PO4-P	150	261	336	16	762	tonnes
Tot-N	6199	4008	4334	202	14743	tonnes
Tot-P	249	435	559	26	1270	tonnes
S.P.M.	8317	8233	9908	597	27054	tonnes
TOC	6537	4937	5564	340	17379	tonnes
COD	28853	22171	26002	1537	78564	tonnes
BOD	13701	9875	11128	681	35385	tonnes

Table 2.1 Sewage Effluents to The Skagerrak Region (1993).

The Skagerrak region with sub-areas: (1) Glomma, (2) Drammenselva, (3) Numedalslågen, (4) Skienselva, (5) Otra

	Total quantity of substance discharged per year:							Precision of the estimate of the load
Sub-areas :	**1**	**2**	**3**	**4**	**5**			
Substance:								
Cd	42	3	14	3	11	kg	_____	%
Hg	67	2	8	2	6	kg	_____	%
Cu	7.69	0.47	2.09	0.45	1.69	tonnes	_____	%
Zn	8.53	0.55	2.44	0.53	1.97	tonnes	_____	%
Pb	550	16	70	15	56	kg	_____	%
Cr-T	2.51	0.05	0.21	0.05	0.17	tonnes	_____	%
Ni	6.29	0.08	0.35	0.08	0.28	tonnes	_____	
PCBs						kg	_____	%
gamma-HCH						kg	_____	%
NH4-N	2504	178	624	1067	522	tonnes	_____	
NO3-N	125	1	4	7	3	tonnes	_____	%
PO4-P	23	27	40	11	49	tonnes	_____	%
Tot-N	3012	237	832	1422	696	tonnes	_____	%
Tot-P	38	45	66	18	82	tonnes	_____	%
S.P.M.	3591	410	1999	361	1956	tonnes	_____	%
TOC	3480	285	1329	248	1195	tonnes	_____	%
COD	15761	1208	5635	1107	5142	tonnes	_____	%
BOD	7587	570	2659	495	2390	tonnes	_____	%

Table 2.2 Sewage Effluents to The Remaining North Sea Region (1993).

The remaining North Sea Region with sub-areas: (6) Orreelva, (7) Suldalslågen

	Total quantity of substance discharged per year:				Precision of the estimate of the load
Sub-areas :	**6**	**7**			
Substance:					
Cd	**12**	**28**	**kg**	_____	%
Hg	**7**	**15**	**kg**	_____	%
Cu	**1.86**	**4.18**	**tonnes**	_____	%
Zn	**2.17**	**4.88**	**tonnes**	_____	%
Pb	**62**	**139**	**kg**	_____	%
Cr-T	**0.19**	**0.42**	**tonnes**	_____	%
Ni	**0.31**	**0.70**	**tonnes**	_____	
PCBs			**kg**	_____	%
gamma-HCH			**kg**	_____	%
NH4-N	**1161**	**1845**	**tonnes**	_____	
NO3-N	**8**	**12**	**tonnes**	_____	%
PO4-P	**53**	**208**	**tonnes**	_____	%
Tot-N	**1548**	**2460**	**tonnes**	_____	%
Tot-P	**89**	**346**	**tonnes**	_____	%
S.P.M.	**2825**	**5407**	**tonnes**	_____	%
TOC	**1592**	**3345**	**tonnes**	_____	%
COD	**6924**	**15248**	**tonnes**	_____	%
BOD	**3185**	**6690**	**tonnes**	_____	%

Table 2.3 Sewage Effluents to The Norwegian Sea Region (1993).

The Norwegian Sea Region with sub-areas: (8) Orkla, (9) Vefsna

	Total quantity of substance discharged per year:				Precision of the estimate of the load
Sub-areas :	**8**	**9**			
Substance:					
Cd	**18**	**16**	**kg**		%
Hg	**10**	**9**	**kg**		%
Cu	**2.73**	**2.43**	**tonnes**		%
Zn	**3.18**	**2.84**	**tonnes**		%
Pb	**91**	**81**	**kg**		%
Cr-T	**0.27**	**0.24**	**tonnes**		%
Ni	**0.45**	**0.41**	**tonnes**		
PCBs			**kg**		%
gamma-HCH			**kg**		%
NH4-N	**2051**	**1199**	**tonnes**		
NO3-N	**14**	**8**	**tonnes**		%
PO4-P	**212**	**124**	**tonnes**		%
Tot-N	**2735**	**1599**	**tonnes**		%
Tot-P	**353**	**206**	**tonnes**		%
S.P.M.	**5138**	**4770**	**tonnes**		%
TOC	**2933**	**2631**	**tonnes**		%
COD	**13837**	**12164**	**tonnes**		%
BOD	**5865**	**5263**	**tonnes**		%

Table 2.4 Sewage Effluents to The Barents Sea Region (1993).

The Barents Sea Region with sub-area: (10) Alta

	Total quantity of substance discharged per year:			Precision of the estimate of the load
Sub-area :	**10**			
Substance:				
Cd	**2**	**kg**		%
Hg	**1**	**kg**		%
Cu	**0.37**	**tonnes**		%
Zn	**0.43**	**tonnes**		%
Pb	**12**	**kg**		%
Cr-T	**0.04**	**tonnes**		%
Ni	**0.06**	**tonnes**		
PCBs		**kg**		%
gamma-HCH		**kg**		%
NH4-N	**152**	**tonnes**		
NO3-N	**1**	**tonnes**		%
PO4-P	**16**	**tonnes**		%
Tot-N	**202**	**tonnes**		%
Tot-P	**26**	**tonnes**		%
S.P.M.	**597**	**tonnes**		%
TOC	**340**	**tonnes**		%
COD	**1537**	**tonnes**		%
BOD	**681**	**tonnes**		%

APPENDIX III : INDUSTRIAL EFFLUENTS FROM DOWN STREAM AREAS OF MAIN AND TRIBUTARY RIVERS AND RIVERS NOT MONITORED 1993 (Paragraph 11 - 13) **Page:**

Paragraph 11: Industrial effluents ./.

Paragraph 12: Measurements of calculation used - including information on the concentration upon which the measurement is based:

Paragraph 3.3 (Report A, 1991, 1992 - 1994)

Paragraph 13: Any other relevant information (e.g. proportion of substance discharged as insoluble material):

A portion of industrial effluents is included in municipal sewage

Table III Industrial Effluents from down stream areas of mainland Norway to convention waters (1993).

Total quantity of substance discharged per year:

Regions:	I	II	III	IV		
	The Skagerrak	The North Sea	The Norwegian Sea	The Barents Sea	Sum	
Substance:						
Cd	13	194	41	0	248	kg
Hg	3	24	0	0	28	kg
Cu	8.35	1.07	0.28	0.00	9.71	tonnes
Zn	1.84	12.86	35.39	0.00	50.08	tonnes
Pb	302	8331	391	0	9024	kg
Arsenic	172	0	334	0	506	kg
Cr-T	0.07	0.86	0.02	0.00	0.95	tonnes
Ni	2.64	12.01	0.98	0.00	15.62	tonnes
PCBs						kg
gamma-HCH						kg
NO3-N						tonnes
PO4-P						tonnes
Tot-N	1667	435	1067	2	3171	tonnes
Tot-P	161	107	101	1	368	tonnes
S.P.M.	7144	1814337	1106707	2213937	5142125	tonnes
TOC	64	416	111	0	591	tonnes
COD	121321	14323	31191	0	166835	tonnes
BOD	391	2848	2186	20	5445	tonnes
AOX	293	0	1	0	293	tonnes

Table 3.1 Industrial Effluents to The Skagerrak Region (1993).

The Skagerrak Region with sub-areas: (1) Glomma, (2) Drammenselva, (3) Numedalslågen, (4) Skienselva, (5) Otra

	Total quantity of substance discharged per year:							Precision of the estimate of the load
Sub-areas : Substance:	1	2	3	4	5			
Cd	6.08	0.00	5.80	0.48	0.50	kg	_____	%
Hg	2.97	0.00	0.00	0.17	0.00	kg	_____	%
Cu	6961	0	72	94	1225	kg	_____	%
Zn	428	1	138	1065	207	kg	_____	%
Pb	71.0	0.0	23.1	106.0	102.0	kg	_____	%
Arsenic	0.0	0.0	0.0	0.0	172.0	kg	_____	%
Cr-T	10.1	0.4	10.6	46.0	3.4	kg	_____	%
Ni	29.8	1.3	849.4	43.1	1715.0	kg	_____	%
PCBs						kg	_____	%
gamma-HCH						kg	_____	%
NO3-N						tonnes	_____	%
PO4-P						tonnes	_____	%
Tot-N	196.7	152.5	93.7	1218.1	6.2	tonnes	_____	%
Tot-P	40.7	40.1	67.7	10.2	2.1	tonnes	_____	%
S.P.M.	2961	237	1628	2017	301	tonnes	_____	%
TOC	20.0	0.0	35.1	8.6	0.0	tonnes	_____	%
COD	78791	220	27908	14096	305	tonnes	_____	%
BOD	129.5	157.0	40.0	0.0	64.0	tonnes	_____	%
AOX	292.4	0.0	0.0	0.2	0.0	tonnes	_____	%

Table 3.2 Industrial Effluents to The Remaining North Sea Region (1993).

The remaining North Sea Region with sub-areas: (6) Orreelva, (7) Suldalslågen

	Total quantity of substance discharged per year:				Precision of the estimate of the load
Sub-areas :	**6**	**7**			
Substance:					
Cd	**0.11**	**193.97**	**kg**	_____	%
Hg	**0.00**	**24.40**	**kg**	_____	%
Cu	**4**	**1070**	**kg**	_____	%
Zn	**147**	**12708**	**kg**	_____	%
Pb	**0.0**	**8331**	**kg**	_____	%
Arsenic	**0.0**	**0.0**	**kg**	_____	%
Cr-T	**280.5**	**577.0**	**kg**	_____	%
Ni	**10705.0**	**1304.6**	**kg**	_____	%
PCBs			**kg**	_____	%
gamma-HCH			**kg**	_____	%
NO3-N			**tonnes**	_____	%
PO4-P			**tonnes**	_____	%
Tot-N	**63.4**	**371.8**	**tonnes**	_____	%
Tot-P	**17.4**	**89.1**	**tonnes**	_____	%
S.P.M.	**1759807**	**54531**	**tonnes**	_____	%
TOC	**51.2**	**364.7**	**tonnes**	_____	%
COD	**511**	**13812**	**tonnes**	_____	%
BOD	**824.5**	**2023.5**	**tonnes**	_____	%
AOX	**0.0**	**0.0**	**tonnes**	_____	%

Table 3.3 Industrial Effluents to The Norwegian Sea Region (1993).

The Norwegian Sea Region with sub-areas: (8) Orkla, (9) Vefsna

	Total quantity of substance discharged per year:				Precision of the estimate of the load
Sub-areas :	**8**	**9**			
Substance:					
Cd	**34.00**	**7.00**	**kg**	_____	%
Hg	**0.00**	**0.00**	**kg**	_____	%
Cu	**125**	**157**	**kg**	_____	%
Zn	**389**	**35000**	**kg**	_____	%
Pb	**131.0**	**260.0**	**kg**	_____	%
Arsenic	**2.7**	**331.0**	**kg**	_____	%
Cr-T	**8.1**	**14.1**	**kg**	_____	%
Ni	**70.2**	**906.0**	**kg**	_____	%
PCBs			**kg**	_____	%
gamma-HCH			**kg**	_____	%
NO3-N			**tonnes**	_____	%
PO4-P			**tonnes**	_____	%
Tot-N	**484.7**	**581.8**	**tonnes**	_____	%
Tot-P	**63.0**	**37.8**	**tonnes**	_____	%
S.P.M.	**124087**	**982620**	**tonnes**	_____	%
TOC	**20.0**	**91.5**	**tonnes**	_____	%
COD	**31191.4**	**0.0**	**tonnes**	_____	%
BOD	**1672.3**	**514.0**	**tonnes**	_____	%
AOX	**0.7**	**0.0**	**tonnes**	_____	%

Table 3.4 Industrial Effluents toThe Barents Sea Region (1993).

The Barents Sea Region with sub-area: (10) Alta

	Total quantity of substance discharged per year:			Precision of the estimate of the load
Sub-area :	**10**			
Substance:				
Cd	**0.00**	**kg**	_____	%
Hg	**0.00**	**kg**	_____	%
Cu	**0**	**kg**	_____	%
Zn	**0**	**kg**	_____	%
Pb	**0.0**	**kg**	_____	%
Arsenic	**0.0**	**kg**	_____	%
Cr-T	**0.0**	**kg**	_____	%
Ni	**0.0**	**kg**	_____	%
PCBs		**kg**	_____	%
gamma-HCH		**kg**	_____	%
NO3-N		**tonnes**	_____	%
PO4-P		**tonnes**	_____	%
Tot-N	**2.2**	**tonnes**	_____	%
Tot-P	**0.5**	**tonnes**	_____	%
S.P.M.	**2213937**	**tonnes**	_____	%
TOC	**0.0**	**tonnes**	_____	%
COD	**0.0**	**tonnes**	_____	%
BOD	**20.0**	**tonnes**	_____	%
AOX	**0.0**	**tonnes**	_____	%

APPENDIX IV : MAIN RIVERINE INPUTS 1993 (Paragraph 14 - 16) **Page:**

Paragraph 14: Main Rivers ./.

Paragraph15: Measurements of calculation used - including information on the concentration upon which the measurement is based:

Appendix VII (1-10) and Paragraph 3.2 (Report A, 1991, 1992 - 1994)

Paragraph 16: Any other relevant information (e.g. proportion of substance discharged as insoluble material):

Table 4.1 MAIN RIVERINE INPUTS 1993 (1) Glomma.

Total volume:	**41747 1000 m3/day**	**Long term average flow (LTA):**	**60324 1000 m3/day**
Minimum flow:	**8856 1000 m3/day**	**LTA period : 1961 to 1990**	
Maximum flow:	**88188 1000 m3/day**		

	Mean	Number of meas.	Minimum concentr. during the year	Maximum concentr. during the year		Total quantity of substance discharged each year		Were 70 % of measurements above limit of detection ?		Precision of the estimate of the load
Cadmium *	**0.04**	**12**	**0.00**	**0.11**	**µg/l**	**0.66**	**tonnes**	**YES**	____	**%**
Cadmium **	**0.04**	**12**	**0.01**	**0.11**	**µg/l**	**0.70**	**tonnes**		____	**%**
Mercury *	**2.89**	**9**	**0.00**	**9.50**	**ng/l**	**34.75**	**kg**	**YES**	____	**%**
Mercury **	**3.00**	**9**	**1.00**	**9.50**	**ng/l**	**37.54**	**kg**		____	**%**
Copper	**2.24**	**12**	**1.36**	**3.56**	**µg/l**	**32.55**	**tonnes**	**YES**	____	**%**
Zinc	**5.45**	**12**	**1.90**	**11.10**	**µg/l**	**79.92**	**tonnes**	**YES**	____	**%**
Lead	**0.55**	**12**	**0.12**	**1.26**	**µg/l**	**8.66**	**tonnes**	**YES**	____	**%**
Arsenic	**0.16**	**11**	**0.01**	**0.39**	**µg/l**	**2.30**	**tonnes**	**YES**	____	**%**
Total Cr-T *	**0.88**	**12**	**0.00**	**2.31**	**µg/l**	**13.07**	**tonnes**	**YES**	____	**%**
Total Cr-T **	**0.88**	**12**	**0.01**	**2.31**	**µg/l**	**13.09**	**tonnes**		____	**%**
Ni	**1.29**	**12**	**0.59**	**3.07**	**µg/l**	**19.45**	**tonnes**	**YES**	____	**%**
PCBs *		**3**			**ng/l**	**0.00**	**kg**	**NO**	____	**%**
PCBs **		**3**			**ng/l**	**3.20**	**kg**		____	**%**
gamma-HCH (lindane)	**0.62**	**3**	**0.59**	**0.65**	**ng/l**	**9.67**	**kg**	**YES**	____	**%**
Ammonia (NH4-N)	**28.50**	**12**	**11.00**	**71.00**	**µg/l**	**432.46**	**tonnes**	**YES**	____	**%**
Nitrates (NO3-N)	**379.58**	**12**	**150.00**	**920.00**	**µg/l**	**5851.21**	**tonnes**	**YES**	____	**%**
Orthoph. (PO4-P)	**10.00**	**12**	**2.00**	**32.00**	**µg/l**	**148.57**	**tonnes**	**YES**	____	**%**
Total N	**597.50**	**12**	**370.00**	**1330.00**	**µg/l**	**9203**	**tonnes**	**YES**	____	**%**
Total P	**20.33**	**12**	**8.00**	**56.00**	**µg/l**	**311**	**tonnes**	**YES**	____	**%**
Susp. Part. Matter	**12.36**	**12**	**1.91**	**45.70**	**mg/l**	**181558**	**tonnes**	**YES**	____	**%**
TOC	**3.93**	**10**	**2.20**	**6.10**	**mg/l**	**60220**	**tonnes**	**YES**	____	**%**

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

Table 4.2 MAIN RIVERINE INPUTS 1993 (2) Drammenselva .

Total volume:	**25981**	**1000 m3/day**	**Long term average flow (LTA):**	**26743 1000 m3/day**
Minimum flow:	**9176**	**1000 m3/day**	**LTA period : 1961 to 1990**	
Maximum flow:	**64817**	**1000 m3/day**		

	Mean	Number of meas.	Minimum concentr. during the year	Maximum concentr. during the year		Total quantity of substance discharged each year		Were 70 % of measurements above limit of detection ?	Precision of the estimate of the load
Cadmium *	0.03	12	0.00	0.07	µg/l	0.25	tonnes	YES	%
Cadmium **	0.03	12	0.01	0.07	µg/l	0.27	tonnes		%
Mercury *	0.72	9	0.00	2.00	ng/l	5.60	kg	NO	%
Mercury **	1.17	9	1.00	2.00	ng/l	11.08	kg		%
Copper	0.80	12	0.54	1.12	µg/l	7.37	tonnes	YES	%
Zinc	2.51	12	0.50	3.55	µg/l	24.23	tonnes	YES	%
Lead	0.15	12	0.05	0.30	µg/l	1.50	tonnes	YES	%
Arsenic	0.16	12	0.07	0.52	µg/l	1.72	tonnes	YES	%
Total Cr-T	0.30	12	0.06	0.51	µg/l	3.00	tonnes	YES	%
Ni	0.62	12	0.42	0.93	µg/l	5.90	tonnes	YES	%
PCBs *		3			ng/l	0.00	kg	NO	%
PCBs **		3			ng/l	1.99	kg		%
gamma-HCH (lindane)	0.82	3	0.71	0.88	ng/l	7.79	kg	YES	%
Ammonia (NH4-N)	14.50	12	8.00	21.00	µg/l	129.21	tonnes	YES	%
Nitrates (NO3-N)	243.92	12	132.00	335.00	µg/l	2319.27	tonnes	YES	%
Orthoph. (PO4-P)	1.38	12	0.50	4.00	µg/l	12.60	tonnes	YES	%
Total N	398.75	12	315.00	500.00	µg/l	3753.23	tonnes	YES	%
Total P	5.25	12	4.00	10.00	µg/l	49.12	tonnes	YES	%
Susp. Part. Matter	1.65	12	0.74	5.18	mg/l	16336	tonnes	YES	%
TOC	2.83	10	2.30	3.60	mg/l	26925	tonnes	YES	%

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

Table 4.3 MAIN RIVERINE INPUTS 1993 (3) Numedalslågen .

Total volume:	**9601**	**1000 m3/day**	**Long term average flow (LTA):**	**10082 1000 m3/day**
Minimum flow:	**3249**	**1000 m3/day**	**LTA period : 1961 to 1990**	
Maximum flow:	**29462**	**1000 m3/day**		

	Mean	Number of meas.	Minimum concentr. during the year	Maximum concentr. during the year		Total quantity of substance discharged each year		Were 70 % of measurements above limit of detection ?		Precision of the estimate of the load
Cadmium *	**0.06**	**12**	**0.00**	**0.27**	**µg/l**	**0.23**	**tonnes**	**YES**	_____	**%**
Cadmium **	**0.06**	**12**	**0.01**	**0.27**	**µg/l**	**0.23**	**tonnes**		_____	**%**
Mercury	**1.89**	**9**	**1.00**	**4.00**	**ng/l**	**7.35**	**kg**	**YES**	_____	**%**
Copper	**10.02**	**12**	**0.57**	**44.80**	**µg/l**	**38.85**	**tonnes**	**YES**	_____	**%**
Zinc	**37.05**	**12**	**2.45**	**127.60**	**µg/l**	**153.20**	**tonnes**	**YES**	_____	**%**
Lead	**1.23**	**12**	**0.19**	**3.38**	**µg/l**	**4.93**	**tonnes**	**YES**	_____	**%**
Arsenic	**0.19**	**12**	**0.08**	**0.59**	**µg/l**	**0.72**	**tonnes**	**YES**	_____	**%**
Total Cr-T	**0.54**	**12**	**0.21**	**1.29**	**µg/l**	**2.16**	**tonnes**	**YES**	_____	**%**
Ni	**0.59**	**12**	**0.18**	**1.18**	**µg/l**	**2.19**	**tonnes**	**YES**	_____	**%**
PCBs *		**3**			**ng/l**	**0.00**	**kg**	**NO**	_____	**%**
PCBs **		**3**			**ng/l**	**0.74**	**kg**		_____	**%**
gamma-HCH (lindane)	**0.60**	**3**	**0.51**	**0.76**	**ng/l**	**2.12**	**kg**	**YES**	_____	**%**
Ammonia (NH4-N)	**26.67**	**12**	**10.00**	**46.00**	**µg/l**	**93.53**	**tonnes**	**YES**	_____	**%**
Nitrates (NO3-N)	**210.83**	**12**	**37.00**	**525.00**	**µg/l**	**833.22**	**tonnes**	**YES**	_____	**%**
Orthoph. (PO4-P)	**6.58**	**12**	**2.00**	**23.00**	**µg/l**	**28.18**	**tonnes**	**YES**	_____	**%**
Total N	**403.33**	**12**	**170.00**	**940.00**	**µg/l**	**1587.52**	**tonnes**	**YES**	_____	**%**
Total P	**12.50**	**12**	**4.00**	**42.00**	**µg/l**	**53.52**	**tonnes**	**YES**	_____	**%**
Susp. Part. Matter	**6.41**	**12**	**1.16**	**28.10**	**mg/l**	**29493**	**tonnes**	**YES**	_____	**%**
TOC	**4.30**	**1**	**4.30**	**4.30**	**mg/l**	**15068**	**tonnes**	**YES**	_____	**%**

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

Table 4.4 MAIN RIVERINE INPUTS 1993 (4) Skienselva .

Total volume:	**20220**	**1000 m3/day**	**Long term average flow (LTA):**	**22611 1000 m3/day**
Minimum flow:	**6912**	**1000 m3/day**	**LTA period : 1961 to 1990**	
Maximum flow:	**51408**	**1000 m3/day**		

	Mean	Number of meas.	Minimum concentr. during the year	Maximum concentr. during the year		Total quantity of substance discharged each year		Were 70 % of measurements above limit of detection ?		Precision of the estimate of the load
Cadmium *	**0.04**	**12**	**0.00**	**0.17**	**µg/l**	**0.28**	**tonnes**	**YES**	____	**%**
Cadmium **	**0.04**	**12**	**0.01**	**0.17**	**µg/l**	**0.28**	**tonnes**		____	**%**
Mercury *	**0.78**	**9**	**0.00**	**4.00**	**ng/l**	**6.07**	**kg**	**NO**	____	**%**
Mercury **	**1.33**	**9**	**1.00**	**4.00**	**ng/l**	**9.60**	**kg**		____	**%**
Copper	**0.45**	**12**	**0.31**	**0.68**	**µg/l**	**3.18**	**tonnes**	**YES**	____	**%**
Zinc	**2.97**	**12**	**1.42**	**5.46**	**µg/l**	**22.03**	**tonnes**	**YES**	____	**%**
Lead *	**0.08**	**12**	**0.00**	**0.24**	**µg/l**	**0.52**	**tonnes**	**YES**	____	**%**
Lead **	**0.08**	**12**	**0.02**	**0.24**	**µg/l**	**0.53**	**tonnes**	**YES**	____	**%**
Arsenic	**0.11**	**12**	**0.01**	**0.52**	**µg/l**	**0.95**	**tonnes**	**YES**	____	**%**
Total Cr-T	**0.31**	**12**	**0.01**	**0.88**	**µg/l**	**2.04**	**tonnes**	**YES**	____	**%**
Ni	**0.48**	**12**	**0.06**	**1.24**	**µg/l**	**3.56**	**tonnes**	**YES**	____	**%**
PCBs *		**3**			**ng/l**	**0.00**	**kg**	**NO**	____	**%**
PCBs **		**3**			**ng/l**	**1.55**	**kg**		____	**%**
gamma-HCH (lindane)	**1.07**	**3**	**0.93**	**1.21**	**ng/l**	**8.13**	**kg**	**YES**	____	**%**
Ammonia (NH4-N)	**12.42**	**12**	**5.00**	**40.00**	**µg/l**	**82.31**	**tonnes**	**YES**	____	**%**
Nitrates (NO3-N)	**229.58**	**12**	**165.00**	**285.00**	**µg/l**	**1750.94**	**tonnes**	**YES**	____	**%**
Orthoph. (PO4-P)	**0.67**	**12**	**0.50**	**1.00**	**µg/l**	**4.79**	**tonnes**	**YES**	____	**%**
Total N	**330.42**	**12**	**280.00**	**380.00**	**µg/l**	**2485.03**	**tonnes**	**YES**	____	**%**
Total P	**2.50**	**12**	**2.00**	**3.00**	**µg/l**	**17.93**	**tonnes**	**YES**	____	**%**
Susp. Part. Matter	**0.52**	**12**	**0.31**	**0.75**	**mg/l**	**3884**	**tonnes**	**YES**	____	**%**
TOC	**2.40**	**1**	**2.40**	**2.40**	**mg/l**	**17713**	**tonnes**	**YES**	____	**%**

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

Table 4.5 MAIN RIVERINE INPUTS 1993 (5) Otra.

Total volume:	**12979**	**1000 m3/day**	**Long term average flow (LTA):**	**12841 1000 m3/day**
Minimum flow:	**4355**	**1000 m3/day**	**LTA period : 1961 to 1990**	
Maximum flow:	**37299**	**1000 m3/day**		

	Mean	Number of meas.	Minimum concentr. during the year	Maximum concentr. during the year		Total quantity of substance discharged each year		Were 70 % of measurements above limit of detection ?		Precision of the estimate of the load
Cadmium *	0.02	12	0.00	0.05	µg/l	0.10	tonnes	YES	_____	%
Cadmium **	0.02	12	0.01	0.05	µg/l	0.11	tonnes		_____	%
Mercury *	0.50	9	0.00	1.50	ng/l	2.56	kg	NO	_____	%
Mercury **	1.06	9	1.00	1.50	ng/l	5.04	kg		_____	%
Copper	0.41	12	0.33	0.51	µg/l	1.93	tonnes	YES	_____	%
Zinc	5.24	12	3.77	7.45	µg/l	24.96	tonnes	YES	_____	%
Lead	0.32	12	0.07	0.51	µg/l	1.48	tonnes	YES	_____	%
Arsenic	0.12	12	0.02	0.35	µg/l	0.55	tonnes	YES	_____	%
Total Cr-T	0.48	12	0.29	0.93	µg/l	2.26	tonnes	YES	_____	%
Ni	0.55	12	0.03	0.94	µg/l	2.72	tonnes	YES	_____	%
PCBs *		3			ng/l	0.00	kg	NO	_____	%
PCBs **		3			ng/l	0.99	kg		_____	%
gamma-HCH (lindane)	0.82	3	0.74	0.99	ng/l	3.70	kg	YES	_____	%
Ammonia (NH4-N)	8.50	12	3.00	24.00	µg/l	42.36	tonnes	YES	_____	%
Nitrates (NO3-N)	116.92	12	56.00	180.00	µg/l	576.71	tonnes	YES	_____	%
Orthoph. (PO4-P)	0.63	12	0.50	1.00	µg/l	2.95	tonnes	YES	_____	%
Total N	232.50	12	170.00	320.00	µg/l	1124.11	tonnes	YES	_____	%
Total P	3.83	12	3.00	5.00	µg/l	17.95	tonnes	YES	_____	%
Susp. Part. Matter	1.18	12	0.76	1.91	mg/l	5598	tonnes	YES	_____	%
TOC	2.58	12	1.20	4.40	mg/l	12305	tonnes	YES	_____	%

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

Table 4.6 MAIN RIVERINE INPUTS 1993 (6) Orreelva .

Total volume:	**196 1000 m3/day**	**Long term average flow (LTA):**	**333 1000 m3/day**
Minimum flow:	**12 1000 m3/day**	**LTA period : 1961 to 1990**	
Maximum flow:	**858 1000 m3/day**		

	Mean	Number of meas.	Minimum concentr. during the year	Maximum concentr. during the year		Total quantity of substance discharged each year		Were 70 % of measurements above limit of detection ?		Precision of the estimate of the load
Cadmium *	**0.03**	**12**	**0.00**	**0.11**	**µg/l**	**0.00**	**tonnes**	**YES**	_____	%
Cadmium **	**0.03**	**12**	**0.01**	**0.11**	**µg/l**	**0.00**	**tonnes**		_____	%
Mercury *	**0.50**	**9**	**0.00**	**2.00**	**ng/l**	**0.03**	**kg**	**NO**	_____	%
Mercury **	**1.17**	**9**	**1.00**	**2.00**	**ng/l**	**0.08**	**kg**		_____	%
Copper	**1.51**	**12**	**0.80**	**4.31**	**µg/l**	**0.17**	**tonnes**	**YES**	_____	%
Zinc	**3.53**	**12**	**0.50**	**25.40**	**µg/l**	**0.73**	**tonnes**	**YES**	_____	%
Lead	**0.73**	**12**	**0.06**	**5.66**	**µg/l**	**0.16**	**tonnes**	**YES**	_____	%
Arsenic	**0.37**	**12**	**0.12**	**0.96**	**µg/l**	**0.04**	**tonnes**	**YES**	_____	%
Total Cr-T	**2.12**	**12**	**1.49**	**3.14**	**µg/l**	**0.15**	**tonnes**	**YES**	_____	%
Ni	**2.09**	**12**	**1.31**	**4.18**	**µg/l**	**0.19**	**tonnes**	**YES**	_____	%
PCBs *		**3**			**ng/l**	**0.00**	**kg**	**NO**	_____	%
PCBs **		**3**			**ng/l**	**0.02**	**kg**		_____	%
gamma-HCH (lindane)	**1.19**	**3**	**0.52**	**2.33**	**ng/l**	**0.07**	**kg**	**YES**	_____	%
Ammonia (NH4-N)	**28.58**	**12**	**13.00**	**52.00**	**µg/l**	**2.56**	**tonnes**	**YES**	_____	%
Nitrates (NO3-N)	**628.83**	**12**	**2.00**	**1850.00**	**µg/l**	**80.22**	**tonnes**	**YES**	_____	%
Orthoph. (PO4-P)	**19.92**	**12**	**3.00**	**137.00**	**µg/l**	**4.00**	**tonnes**	**YES**	_____	%
Total N	**1410.4**	**12**	**110.00**	**3180.00**	**µg/l**	**145.47**	**tonnes**	**YES**	_____	%
Total P	**71.25**	**12**	**31.00**	**314.00**	**µg/l**	**10.06**	**tonnes**	**YES**	_____	%
Susp. Part. Matter	**13.34**	**12**	**3.93**	**71.10**	**mg/l**	**2110**	**tonnes**	**YES**	_____	%
TOC	**5.50**	**1**	**5.50**	**5.50**	**mg/l**	**393**	**tonnes**	**YES**	_____	%

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

Table 4.7 MAIN RIVERINE INPUTS 1993 (7) Suldalslågen.

Total volume:	**5902**	**1000 m3/day**	**Long term average flow (LTA): 7422 1000 m3/day**
Minimum flow:	**1125**	**1000 m3/day**	**LTA period : 1961 to 1990**
Maximum flow:	**22766**	**1000 m3/day**	

	Mean	Number of meas.	Minimum concentr. during the year	Maximum concentr. during the year		Total quantity of substance discharged each year		Were 70 % of measurements above limit of detection ?		Precision of the estimate of the load
Cadmium	**0.08**	**4**	**0.00**	**0.15**	**µg/l**	**0.24**	**tonnes**	**YES**	____	%
Cadmium **	**0.08**	**4**	**0.01**	**0.15**	**µg/l**	**0.25**	**tonnes**		____	%
Mercury *	**0.33**	**3**	**0.00**	**1.00**	**ng/l**	**0.38**	**kg**	**NO**	____	%
Mercury **	**1.00**	**3**	**1.00**	**1.00**	**ng/l**	**2.15**	**kg**		____	%
Copper	**0.40**	**4**	**0.27**	**0.60**	**µg/l**	**0.75**	**tonnes**	**YES**	____	%
Zinc	**2.97**	**4**	**2.18**	**3.81**	**µg/l**	**6.48**	**tonnes**	**YES**	____	%
Lead	**0.13**	**4**	**0.07**	**0.18**	**µg/l**	**0.31**	**tonnes**	**YES**	____	%
Arsenic	**0.07**	**4**	**0.01**	**0.15**	**µg/l**	**0.12**	**tonnes**	**YES**	____	%
Total Cr-T	**0.56**	**4**	**0.26**	**0.79**	**µg/l**	**0.90**	**tonnes**	**YES**	____	%
Ni	**0.28**	**4**	**0.02**	**0.55**	**µg/l**	**0.32**	**tonnes**	**YES**	____	%
PCBs *		**2**			**ng/l**	**0.02**	**kg**	**NO**	____	%
PCBs **		**2**			**ng/l**	**0.45**	**kg**		____	%
gamma-HCH (lindane)	**0.85**	**2**	**0.75**	**0.95**	**ng/l**	**1.92**	**kg**	**YES**	____	%
Ammonia (NH4-N)	**4.50**	**4**	**3.00**	**5.00**	**µg/l**	**10.57**	**tonnes**	**YES**	____	%
Nitrates (NO3-N)	**190.75**	**4**	**139.00**	**320.00**	**µg/l**	**340.57**	**tonnes**	**YES**	____	%
Orthoph. (PO4-P)	**0.50**	**4**	**0.50**	**0.50**	**µg/l**	**1.08**	**tonnes**	**YES**	____	%
Total N	**246.25**	**4**	**195.00**	**355.00**	**µg/l**	**456.66**	**tonnes**	**YES**	____	%
Total P	**1.75**	**4**	**1.00**	**2.00**	**µg/l**	**3.95**	**tonnes**	**YES**	____	%
Susp. Part. Matter	**0.62**	**4**	**0.46**	**0.75**	**mg/l**	**1439**	**tonnes**	**YES**	____	%
TOC	**0.50**	**1**	**0.50**	**0.50**	**mg/l**	**1077**	**tonnes**	**YES**	____	%

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

Table 4.8 MAIN RIVERINE INPUTS 1993 (8) Orkla .

Total volume:	**5808**	**1000 m3/day**	**Long term average flow (LTA): 5374 1000 m3/day**
Minimum flow:	**1642**	**1000 m3/day**	**LTA period : 1961 to 1990**
Maximum flow:	**47693**	**1000 m3/day**	

	Mean	Number of meas.	Minimum concentr. during the year	Maximum concentr. during the year		Total quantity of substance discharged each year		Were 70 % of measurements above limit of detection ?		Precision of the estimate of the load
Cadmium *	**0.08**	**13**	**0.00**	**0.18**	**µg/l**	**0.13**	**tonnes**	**YES**	_____	%
Cadmium **	**0.09**	**13**	**0.01**	**0.18**	**µg/l**	**0.14**	**tonnes**		_____	%
Mercury *	**0.50**	**9**	**0.00**	**2.00**	**ng/l**	**0.62**	**kg**	**NO**	_____	%
Mercury **	**1.17**	**9**	**1.00**	**2.00**	**ng/l**	**2.33**	**kg**		_____	%
Copper	**9.77**	**13**	**3.51**	**18.30**	**µg/l**	**17.53**	**tonnes**	**YES**	_____	%
Zinc	**30.11**	**13**	**10.20**	**56.20**	**µg/l**	**50.88**	**tonnes**	**YES**	_____	%
Lead *	**0.05**	**13**	**0.00**	**0.12**	**µg/l**	**0.12**	**tonnes**	**YES**	_____	%
Lead **	**0.05**	**13**	**0.02**	**0.12**	**µg/l**	**0.12**	**tonnes**		_____	%
Arsenic	**0.88**	**12**	**0.02**	**6.07**	**µg/l**	**1.94**	**tonnes**	**YES**	_____	%
Total Cr-T *	**0.49**	**12**	**0.00**	**0.81**	**µg/l**	**1.14**	**tonnes**	**YES**	_____	%
Total Cr-T **	**0.49**	**12**	**0.01**	**0.81**	**µg/l**	**1.14**	**tonnes**		_____	%
Ni	**1.24**	**12**	**0.57**	**2.18**	**µg/l**	**2.30**	**tonnes**	**YES**	_____	%
PCBs *		**3**			**ng/l**	**0.03**	**kg**	**NO**	_____	%
PCBs **		**3**			**ng/l**	**0.45**	**kg**		_____	%
gamma-HCH (lindane)	**0.29**	**3**	**0.17**	**0.37**	**ng/l**	**0.58**	**kg**	**YES**	_____	%
Ammonia (NH4-N)	**7.00**	**13**	**3.00**	**18.00**	**µg/l**	**12.37**	**tonnes**	**YES**	_____	%
Nitrates (NO3-N)	**141.08**	**13**	**62.00**	**305.00**	**µg/l**	**232.68**	**tonnes**	**YES**	_____	%
Orthoph. (PO4-P)	**1.28**	**13**	**0.50**	**4.00**	**µg/l**	**3.28**	**tonnes**	**YES**	_____	%
Total N	**261.08**	**13**	**175.00**	**400.00**	**µg/l**	**488.97**	**tonnes**	**YES**	_____	%
Total P	**4.31**	**13**	**3.00**	**9.00**	**µg/l**	**9.35**	**tonnes**	**YES**	_____	%
Susp. Part. Matter	**1.52**	**13**	**0.45**	**4.06**	**mg/l**	**3971**	**tonnes**	**YES**	_____	%
TOC	**2.78**	**13**	**1.60**	**5.10**	**mg/l**	**6215**	**tonnes**	**YES**	_____	%

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

Table 4.9 MAIN RIVERINE INPUTS 1993 (9) Vefsna .

Total volume:	**16137**	**1000 m3/day**	**Long term average flow (LTA): 15620 1000 m3/day**
Minimum flow:	**3424**	**1000 m3/day**	**LTA period : 1961 to 1990**
Maximum flow:	**85372**	**1000 m3/day**	

	Mean	Number of meas.	Minimum concentr. during the year	Maximum concentr. during the year		Total quantity of substance discharged each year		Were 70 % of measurements above limit of detection ?	Precision of the estimate of the load
Cadmium *	0.05	12	0.00	0.15	µg/l	0.24	tonnes	YES	%
Cadmium **	0.05	12	0.01	0.15	µg/l	0.26	tonnes		%
Mercury *	0.39	9	0.00	1.50	ng/l	1.88	kg	NO	%
Mercury **	1.06	9	1.00	1.50	ng/l	6.40	kg		%
Copper	2.81	12	0.19	7.41	µg/l	17.64	tonnes	YES	%
Zinc	4.95	12	0.50	9.95	µg/l	33.47	tonnes	YES	%
Lead *	0.38	12	0.00	1.57	µg/l	1.50	tonnes	YES	%
Lead **	0.38	12	0.02	1.57	µg/l	1.51	tonnes	YES	%
Arsenic	0.15	12	0.02	0.35	µg/l	0.94	tonnes	YES	%
Total Cr-T	0.84	12	0.19	1.61	µg/l	4.68	tonnes	YES	%
Ni	0.92	12	0.08	2.44	µg/l	4.61	tonnes	YES	%
PCBs *		3			ng/l	0.00	kg	NO	%
PCBs **		3			ng/l	1.24	kg		%
gamma-HCH (lindane)	0.29	3	0.11	0.54	ng/l	2.22	kg	YES	%
Ammonia (NH4-N)	9.58	12	5.00	20.00	µg/l	62.37	tonnes	YES	%
Nitrates (NO3-N)	87.00	12	22.00	205.00	µg/l	388.29	tonnes	YES	%
Orthoph. (PO4-P)	1.50	12	0.50	4.00	µg/l	10.33	tonnes	YES	%
Total N	229.58	12	81.00	370.00	µg/l	1393.50	tonnes	YES	%
Total P	3.75	12	1.00	8.00	µg/l	25.92	tonnes	YES	%
Susp. Part. Matter	4.01	12	0.31	24.40	mg/l	20413	tonnes	YES	%
TOC	3.40	1	3.40	3.40	mg/l	20026	tonnes	YES	%

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

Table 4.10 MAIN RIVERINE INPUTS 1993 (10) Altaelva.

Total volume: 8567 1000 m3/day
Minimum flow: 1874 1000 m3/day
Maximum flow: 57491 1000 m3/day

Long term average flow (LTA): 7487 1000 m3/day
LTA period : 1961 to 1990

	Mean	Number of meas.	Minimum concentr. during the year	Maximum concentr. during the year		Total quantity of substance discharged each year		Were 70 % of measurements above limit of detection ?		Precision of the estimate of the load
Cadmium *	0.06	4	0.00	0.12	µg/l	0.11	tonnes	YES	____	%
Cadmium **	0.06	4	0.01	0.12	µg/l	0.12	tonnes		____	%
Mercury *	0.83	3	0.00	1.50	ng/l	3.94	kg	NO	____	%
Mercury **	1.17	3	1.00	1.50	ng/l	4.24	kg		____	%
Copper	2.30	4	1.10	3.06	µg/l	7.73	tonnes	YES	____	%
Zinc	1.16	4	0.50	2.29	µg/l	3.22	tonnes	YES	____	%
Lead	0.15	4	0.10	0.18	µg/l	0.48	tonnes	YES	____	%
Arsenic	0.32	4	0.06	0.48	µg/l	0.54	tonnes	YES	____	%
Total Cr-T	1.36	4	0.72	1.97	µg/l	3.17	tonnes	YES	____	%
Ni	0.71	4	0.31	1.29	µg/l	1.35	tonnes	YES	____	%
PCBs *		2			ng/l	0.00	kg	NO	____	%
PCBs **		2			ng/l	0.66	kg		____	%
gamma-HCH (lindane)	0.15	2	0.11	0.19	ng/l	0.54	kg	YES	____	%
Ammonia (NH4-N)	7.25	4	3.00	11.00	µg/l	29.43	tonnes	YES	____	%
Nitrates (NO3-N)	53.75	4	40.00	84.00	µg/l	137.18	tonnes	YES	____	%
Orthoph. (PO4-P)	5.63	4	0.50	18.00	µg/l	9.81	tonnes	YES	____	%
Total N	222.50	4	185.00	290.00	µg/l	696.15	tonnes	YES	____	%
Total P	9.75	4	6.00	18.00	µg/l	27.04	tonnes	YES	____	%
Susp. Part. Matter	1.83	4	0.23	5.31	mg/l	12033	tonnes	YES	____	%
TOC	3.50	1	3.50	3.50	mg/l	10945	tonnes	YES	____	%

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

APPENDIX V : INPUTS FROM TRIBUTARY RIVERS 1993 (Paragraph 17 - 19) **Page:**

Paragraph 17: Tributary rivers ./.

Paragraph18: Measurements of calculation used - including information on the concentration upon which the measurement is based:

Appendix VIII and IX (1-10) and Paragraph 3.2 (Report A, 1991, 1992 - 1994)

Paragraph 19: Any other relevant information (e.g. proportion of substance discharged as insoluble material):

Table 5.1 The Skagerrak Region. Inputs from tributary rivers 1993 in The Subareas (1-5).

The Skagerrak Region with sub-areas: (1A) Glomma, (1B) Inner Oslofj., (2) Drammenselva, (3) Numedalslågen, (4) Skienselva, (5) Otra

Total quantity of substance discharged per year:								Were 70 % of measurements above the detection limit ?		Precision of the estimate of the load
Sub-areas :	**1A**	**1B**	**2**	**3**	**4**	**5**				
Substance:										
Cd *	0.05	0.27	0.00	0.02	0.01	0.56	tonnes	YES	_____	%
Cd **	0.05	0.27	0.00	0.02	0.01	0.56	tonnes		_____	%
Hg *	1.08	1.28	0.21	0.36	1.62	14.55	kg	YES	_____	%
Hg **	1.08	1.38	0.21	0.65	1.62	16.39	kg		_____	%
Cu	1.1	1.1	0.1	0.8	0.3	3.3	tonnes	YES	_____	%
Zn	2.6	4.7	1.1	11.1	6.5	78.4	tonnes	YES	_____	%
Pb *	1.12	0.51	0.05	0.28	0.15	4.30	tonnes	YES	_____	%
Pb **	1.12	0.51	0.05	0.28	0.15	4.30	tonnes		_____	%
Arsenic *	0.31	0.13	0.03	0.14	0.25	2.01	tonnes	YES	_____	
Arsenic **	0.31	0.13	0.03	0.14	0.25	2.01	tonnes		_____	
Cr-T *	1.82	0.55	0.17	0.59	0.91	6.08	tonnes	YES	_____	%
Cr-T **	1.82	0.55	0.17	0.59	0.91	6.08	tonnes		_____	%
Ni *	0.98	0.53	0.16	0.57	0.23	1.41	tonnes	YES	_____	%
Ni **	0.98	0.53	0.16	0.57	0.23	1.41	tonnes		_____	%
PCBs *	0.00	0.11	0.00	0.00	0.00	0.00	kg	NO	_____	%
PCBs **	0.21	0.17	0.03	0.11	0.17	1.76	kg		_____	%
gamma-HCH	0.69	0.20	0.04	0.19	0.81	7.44	kg	YES	_____	%
NH4-N	55	31	4	26	19	244	tonnes	YES	_____	%
NO3-N	843	414	141	554	170	1534	tonnes	YES	_____	%
PO4-P	5	5	5	4	0	5	tonnes	YES	_____	%
Total N	1150	640	178	1055	328	2888	tonnes	YES	_____	%
Total P	19	19	8	12	4	39	tonnes	YES	_____	%
S.P.M.	3289	3791	1357	1675	948	10893	tonnes	YES	_____	%
TOC	6864	2157	518	2429	2753	20747	tonnes	YES	_____	%

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

Table 5.2 The remaining North Sea Region. Inputs from tributary rivers 1993 in The Subareas (6-7).

The remaining North Sea Region with sub-areas: (6) Orreelva, (7) Suldalslågen

Total quantity of substance discharged per year:				Were 70 % of measurements above the detection limit ?		Precision of the estimate of the load
Sub-areas :	6	7				
Substance:						
Cd *	0.34	0.67	tonnes	YES	_____	%
Cd **	0.35	0.73	tonnes		_____	%
Hg *	4.87	21.94	kg	NO	_____	%
Hg **	14.28	36.73	kg		_____	%
Cu	3.8	8.5	tonnes	YES	_____	%
Zn	63.0	65.6	tonnes	YES	_____	%
Pb *	6.69	2.54	tonnes	YES	_____	%
Pb **	6.69	2.60	tonnes		_____	%
Arsenic *	3.34	1.55	tonnes	YES	_____	%
Arsenic **	3.34	1.58	tonnes		_____	%
Cr-T *	15.14	18.47	tonnes	YES	_____	%
Cr-T **	15.14	18.47	tonnes		_____	%
Ni *	3.35	1.75	tonnes	YES	_____	%
Ni **	3.35	1.78	tonnes		_____	%
PCBs *	0.00	0.00	kg	NO	_____	%
PCBs **	2.73	5.73	kg		_____	%
gamma-HCH	7.49	6.97	kg	YES	_____	%
NH4-N	280	189	tonnes	YES	_____	%
NO3-N	3132	3432	tonnes	YES	_____	%
PO4-P	20	32	tonnes	YES	_____	%
Total N	4627	5329	tonnes	YES	_____	%
Total P	70	101	tonnes	YES	_____	%
S.P.M.	15598	21767	tonnes	YES	_____	%
TOC	26794	23728	tonnes	YES	_____	%

Measurements below detection limits are treated in two ways :
***) Detection limit = Zero**
****) Detection limit = Limit**

Table 5.3 The Norwegian Sea Region. Inputs from tributary rivers 1993 in The Subareas (8-9).

The Norwegian Sea Region with sub-areas: (8) Orkla, (9) Vefsna

Total quantity of substance discharged per year:				Were 70 % of measurements above the detection limit ?		Precision of the estimate of the load
Sub-areas :	8	9				
Substance:						
Cd *	1.09	0.83	tonnes	YES	_____	%
Cd **	1.11	0.83	tonnes		_____	%
Hg *	61.77	8.12	kg	NO	_____	%
Hg **	72.22	29.20	kg		_____	%
Cu	39.1	36.9	tonnes	YES	_____	%
Zn	110.3	69.8	tonnes	YES	_____	%
Pb *	4.60	4.40	tonnes	YES	_____	%
Pb **	4.64	4.40	tonnes		_____	%
Arsenic *	0.57		tonnes	YES	_____	%
Arsenic **	0.58		tonnes		_____	%
Cr-T *	44.08	42.55	tonnes	YES	_____	%
Cr-T **	44.08	42.55	tonnes		_____	%
Ni *	23.30	19.17	tonnes	YES	_____	%
Ni **	23.31	19.17	tonnes		_____	%
PCBs *	0.98	0.00	kg	NO	_____	%
PCBs **	8.67	6.00	kg		_____	%
gamma-HCH	14.48	8.92	kg	YES	_____	%
NH4-N	289	189	tonnes	YES	_____	%
NO3-N	3666	803	tonnes	YES	_____	%
PO4-P	56	50	tonnes	YES	_____	%
Total N	8660	2619	tonnes	YES	_____	%
Total P	227	129	tonnes	YES	_____	%
S.P.M.	92605	104475	tonnes	YES	_____	%
TOC	24095	5460	tonnes	YES	_____	%

Measurements below detection limits are treated in two ways :
***) Detection limit = Zero**
****) Detection limit = Limit**

Table 5.4 The Barents Region. Inputs from tributary rivers 1993 in The Subarea (10).

The Barents Sea Region with sub-area: (10) Alta

Total quantity of substance discharged per year:			Were 70 % of measurements above the detection limit ?		Precision of the estimate of the load
Sub-area :	10				
Substance:					
Cd *	0.35	tonnes	YES	_____	%
Cd **	0.36	tonnes		_____	%
Hg *	26.43	kg	NO	_____	%
Hg **	31.34	kg		_____	%
Cu	16.4	tonnes	YES	_____	%
Zn	15.6	tonnes	YES	_____	%
Pb *	0.83	tonnes	YES	_____	%
Pb **	0.84	tonnes		_____	%
Cr-T *	15.87	tonnes	YES	_____	%
Cr-T **	15.87	tonnes		_____	%
Ni *	39.40	tonnes	YES	_____	%
Ni **	39.40	tonnes		_____	%
PCBs *	0.00	kg	NO	_____	%
PCBs **	3.54	kg		_____	%
gamma-HCH	3.37	kg	YES	_____	%
NH4-N	342	tonnes	YES	_____	%
NO3-N	519	tonnes	YES	_____	%
PO4-P	12	tonnes	YES	_____	%
Total N	2931	tonnes	YES	_____	%
Total P	104	tonnes	YES	_____	%
S.P.M.	29152	tonnes	YES	_____	%
TOC	21785	tonnes	YES	_____	%

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

APPENDIX VI : OTHER INPUTS 1993 (Paragraph 20) **Page:**

Paragraph 20: Any available information on discharge through urban run-off - storm water overflow - polder effluents etc.:

"Background" is runoff from forested areas and highlands, including effect of acid precipitation

Agriculture runoff:
- "Area" is runoff from arable land
- "Point"-sources are drainage from silos, manures etc.

Paragraph 3.3 (Report A, 1991, 1992 - 1994)

Table 6.1 Nutrients from "Down Stream Areas" of main and tributary rivers and rivers not monitored 1993.

Direct runoff of P and N :

Sub-areas:		Back-ground tonnes	Agriculture Area tonnes	Point tonnes	Sum tonnes
1 Glomma	P	18.5	10.5	0.5	29.4
	N	463.1	520.5	6.8	990.4
	PO4-P	3.7	3.1	0.3	7.1
	NO3-N	277.8	364.3	0.8	643.0
	NH4-N	23.2	36.4	5.5	65.0
1 Inner Oslofjord	P	3.4	1.7	0.3	5.4
	N	72.8	86.3	2.9	161.9
	PO4-P	0.7	0.5	0.2	1.4
	NO3-N	43.7	60.4	0.3	104.4
	NH4-N	3.6	6.0	2.3	12.0
2 Drammenselva	P	1.4	2.1	0.0	3.6
	N	64.0	70.2	0.7	134.8
	PO4-P	0.3	0.6	0.0	1.0
	NO3-N	38.4	49.1	0.1	87.6
	NH4-N	3.2	4.9	0.6	8.7
3 Numedalslågen	P	4.9	10.5	0.2	15.5
	N	184.7	441.9	1.9	628.6
	PO4-P	1.0	3.1	0.1	4.2
	NO3-N	110.8	309.4	0.2	420.4
	NH4-N	9.2	30.9	1.5	41.7
4 Skienselva	P	7.4	2.2	0.1	9.7
	N	329.5	92.7	1.6	423.8
	PO4-P	1.5	0.7	0.1	2.2
	NO3-N	197.7	64.9	0.2	262.8
	NH4-N	16.5	6.5	1.3	24.2
5 Otra	P	7.0	3.8	0.3	11.1
	N	391.8	100.2	3.7	495.7
	PO4-P	1.4	1.1	0.2	2.7
	NO3-N	235.1	70.2	0.4	305.7
	NH4-N	19.6	7.0	2.9	29.5
6 Orreelva	P	23.0	43.7	4.5	71.1
	N	1466.7	1266.2	51.7	2784.6
	PO4-P	4.6	13.1	3.1	20.8
	NO3-N	880.0	886.4	6.2	1772.6
	NH4-N	73.3	88.6	41.4	203.3
7 Suldalslågen	P	58.0	62.2	7.7	127.9
	N	5151.3	1265.3	98.6	6515.2
	PO4-P	11.6	18.7	5.3	35.6
	NO3-N	3090.8	885.7	11.8	3988.3
	NH4-N	257.6	88.6	78.9	425.0
8 Orkla	P	142.1	139.9	15.1	297.1
	N	3850.8	3444.2	192.0	7486.9
	PO4-P	28.4	42.0	10.4	80.8
	NO3-N	2310.5	2410.9	23.0	4744.4
	NH4-N	192.5	241.1	153.6	587.2
9 Vefsna	P	83.6	32.5	7.7	123.9
	N	1920.5	829.7	104.6	2854.7
	PO4-P	16.7	9.8	5.3	31.8
	NO3-N	1152.3	580.8	12.5	1745.6
	NH4-N	96.0	58.1	83.7	237.8
10 Altaelva	P	86.1	1.6	0.6	88.3
	N	1618.2	54.9	7.9	1681.0
	PO4-P	17.2	0.5	0.4	18.1
	NO3-N	970.9	38.4	0.9	1010.3
	NH4-N	80.9	3.8	6.3	91.1

SUM	P	783	tonnes
SUM	N	24158	tonnes
SUM	PO4-P	206	tonnes
SUM	NO3-N	15085	tonnes
SUM	NH4-N	1726	tonnes

APPENDIX VII : MAIN RIVERS 1 - 10. MEASURED CONCENTRATIONS 1993 **Page:**

Table 7A.1 Measured concentrations - 1993 .

Watercourse : Glomma

Annual flow . . . . . : 15238 mill. cbm **Min :** 103 cbm/s

Drainage area. . . . . : 41218 kv.km **Max:** 1021 cbm/s

																PCB (The folloving Congeners) IUPAC NOS										
Date	Q	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd	Pb	S.P.M.	TOC	Hg	Gamm HCH	28	52	101	118	138	153	180	As	Cr-T	Ni
	m3/s	mS/m	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	µg/l	µg/l	µg/l
930112	563.6	4.67	56	32	640	405	58	2.64	11.1	0.03	1.26	45.7													
930219	458.1	4.81	9	4.0	520	365	28	1.58	6.09	0.02	0.48	4.61	4.1												
930318	381.2	5.22	41	26	760	510	71	3.27	8.23	0.02	1.09	29.7													
930416	281.8	5.37	15	7.0	710	495	18	1.76	4.08	0.03	0.29	10.9	3.9	1.5											
930519	179.7	3.81	12	5.0	440	250	16	3.27	7.90	<0.01	0.40	5.61	4.2	1.5	0.59	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930607	858.8	3.31	8	2.0	415	280	16	1.83	1.90	<0.01	0.21	3.59	2.8	<1.0											
930705	512.4	4.31	10	2.0	370	210	16	1.66	3.50	0.04	0.54	3.31	2.2	1.5	0.62	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930813	136.6	4.16	9	4.0	430	245	15	2.13	2.08	0.05	0.12	5.03	3.6	9.5											
930915	640.5	4.01	8	2.0	400	150	11	2.14	2.63	0.07	0.28	1.91	3.1	2.5											
931015	973.5	4.71	14	5.0	640	410	23	1.70	4.54	0.11	0.54	3.48	4.9	2.5	0.65	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
931112	557.5	4.49	8	2.0	515	315	12	1.36	3.98	<0.01	0.36	4.71	4.4	1.5											
931206	563.6	6.15	54	29	1330	920	58	3.56	9.31	0.08	1.05	29.8	6.1	5.5									0.16	0.88	1.29
Min:	136.6	3.31	8	2	370	150	11	1.36	1.9	0.01	0.12	1.91	2.2	1	0.59	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.16	0.88	1.29
Max:	973.5	6.15	56	32	1330	920	71	3.56	11.1	0.11	1.26	45.7	6.1	9.5	0.65	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.16	0.88	1.29
Aver.:	508.9	4.59	20.33	10.00	598	380	28.50	2.24	5.45	0.04	0.55	12.36	3.93	3.00	0.62	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.16	0.88	1.29
St.dev.:	248.9	0.76	18.56	11.63	264	203	21.14	0.76	3.04	0.03	0.38	14.41	1.11	2.78	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Numb.:	12	12	12	12	12	12	12	12	12	12	12	12	10	9	3	3	3	3	3	3	3	3	1	1	1

Table 7A.2 Measured concentrations - 1993 .

Watercourse : Drammenselva

Annual flow . . . . . : 9483 mill. cbm **Min : 106 cbm/s**

Drainage area. . . . . : 17028 kv.km **Max: 750 cbm/s**

Date	Q	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd	Pb	S.P.M.	TOC	Hg	Gamm HCH	PCB (The folloving Congeners) IUPAC NOS 28	52	101	118	138	153	180	As	Cr-T	Ni
	m3/s	mS/m	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	µg/l	µg/l	µg/l
930113	218.0	3.51	4	1.0	415	295	13	0.85	3.03	0.02	0.11	1.23													
930215	296.9	3.39	4	1.0	400	280	13	0.66	2.68	0.01	0.09	1.01													
930315	292.4	2.51	10	4.0	405	270	13	0.83	3.39	0.01	0.23	5.18	2.3												
930413	221.2	3.41	4	2.0	415	270	13	0.65	2.12	0.01	0.10	1.01	2.5	1.0											
930519	658.6	3.11	5	1.0	355	245	8	0.78	3.40	0.03	0.27	1.74	2.8	<1.0	0.88	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930608	188.8	3.75	7	1.0	380	215	16	0.90	1.86	0.03	0.11	1.71	2.6	<1.0											
930705	128.3	3.41	6	1.0	315	132	13	0.76	1.26	0.07	0.16	1.22	2.8	1.0	0.86	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930810	545.7	3.08	5	0.5	325	150	10	0.54	0.50	0.06	0.05	1.68	2.5	<1.0											
930912	194.4	3.57	5	1.0	375	185	16	1.12	2.44	<0.01	0.30	1.46	2.8	1.5											
931014	391.7	3.71	5	2.0	490	295	17	1.09	3.55	<0.01	0.22	2.06	3.6	2.0	0.71	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
931110	282.3	3.59	4	1.0	410	255	21	0.71	2.95	<0.01	0.11	0.81	3.6	<1.0											
931207	283.9	5.13	4	1.0	500	335	21	0.66	2.89	0.06	0.08	0.74	2.8	1.0									0.16	0.3	0.62
Min:	128.3	2.51	4	0.5	315	132	8	0.54	0.5	0.01	0.05	0.74	2.3	1	0.71	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.16	0.3	0.62
Max:	658.6	5.13	10	4	500	335	21	1.12	3.55	0.07	0.3	5.18	3.6	2	0.88	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.16	0.3	0.62
Aver.:	308.5	3.51	5.25	1.38	399	244	14.50	0.80	2.51	0.03	0.15	1.65	2.83	1.17	0.82	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.16	0.30	0.62
St.dev.:	154.6	0.61	1.76	0.93	56	62	3.92	0.18	0.93	0.02	0.08	1.18	0.44	0.35	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Numb.:	12	12	12	12	12	12	12	12	12	12	12	12	10	9	3	3	3	3	3	3	3	3	1	1	1

Table 7A.3 Measured concentrations - 1993.

Watercourse : Numedalslågen

Annual flow . . . . . : 3504 mill. cbm **Min :** 37.6 cbm/s

Drainage area. . . . . : 5513 kv.km **Max:** 341 cbm/s

Date	Q	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd	Pb	S.P.M.	TOC	Hg	Gamm	PCB (The folloving Congeners) IUPAC NOS							As	Cr-T	Ni
															HCH	28	52	101	118	138	153	180			
	m3/s	mS/m	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	µg/l	µg/l	µg/l
930115	92.79	3.31	15	8.0	440	275	43	1.04	5.47	0.02	0.52	5.66													
930216	77.51	2.84	6	4.0	320	180	38	0.57	3.94	0.01	0.19	2.91													
930317	87.23	3.38	28	18	510	320	46	16.9	32.3	0.02	2.87	16.7													
930415	76.07	3.25	5	2.0	365	215	18	10.7	28.8	0.03	1.02	1.72		1.0											
930521	98.57	2.83	7	2.0	315	155	16	10.4	33.4	0.05	1.39	1.19		2.5	0.53	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930614	122.1	1.93	5	2.0	170	37	11	1.00	2.45	0.01	0.46	1.94		1.5											
930715	124.1	2.56	7	2.0	205	67	11	7.47	20.0	0.27	0.54	2.62		1.0	0.76	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930816	114.5	2.61	6	4.0	235	74	10	44.8	128	0.05	2.91	2.45		1.5											
930915	44.71	2.62	4	2.0	285	117	26	2.24	56.0	0.03	0.85	1.16		2.0											
931017	129.0	3.58	8	5.0	545	260	20	6.97	6.37	0.05	0.35	2.47	4.3	2.0	0.51	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
931114	217.0	4.36	42	23	940	525	36	17.5	123	0.12	3.38	28.1		4.0											
931205	125.1	3.57	17	7.0	510	305	45	0.63	4.82	<0.01	0.31	9.98		1.5									0.19	0.54	0.59
Min:	44.71	1.93	4	2	170	37	10	0.57	2.45	0.01	0.19	1.16	4.3	1	0.51	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.19	0.54	0.59
Max:	217.0	4.36	42	23	940	525	46	44.8	127.6	0.27	3.38	28.1	4.3	4	0.76	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.19	0.54	0.59
Aver.:	109.1	3.07	12.50	6.58	403	211	26.67	10.02	37.05	0.06	1.23	6.41	4.30	1.89	0.60	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.19	0.54	0.59
St.dev.:	42.43	0.64	11.63	6.89	210	138	14.12	12.54	44.40	0.07	1.15	8.23		0.93	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Numb.:	12	12	12	12	12	12	12	12	12	12	12	12	1	9	3	3	3	3	3	3	3	3	1	1	1

Table 7A.4 Measured concentrations - 1993 .

Watercourse : Skienselva

Annual flow . . . . . : 7380 mill. cbm **Min : 80 cbm/s**

Drainage area. . . . . : 10348 kv.km **Max: 595 cbm/s**

Date	Q	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd	Pb	S.P.M.	TOC	Hg	Gamm HCH	PCB (The folloving Congeners) IUPAC NOS 28	52	101	118	138	153	180	As	Cr-T	Ni
	m3/s	mS/m	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	µg/l	µg/l	µg/l
930112	242.0	2.17	2.0	1.0	360	285	5	0.39	3.36	0.02	0.06	0.53													
930216	326.0	2.16	3.0	0.5	380	270	8	0.40	3.59	0.01	0.08	0.64													
930316	205.0	2.21	3.0	1.0	365	265	10	0.49	3.34	0.01	0.07	0.31													
930415	208.0	2.18	2.0	0.5	355	260	8	0.31	2.78	0.02	0.07	0.43		4.0											
930514	478.0	2.18	2.0	0.5	350	275	8	0.39	3.37	0.02	0.02	0.56		1.0	1.21	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930610	145.0	2.19	3.0	0.5	315	220	40	0.50	3.04	0.08	0.24	0.42		1.0											
930715	113.0	1.99	3.0	1.0	295	200	8	0.68	2.81	<0.01	0.07	0.67		<1.0	1.08	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930812	252.0	2.01	2.0	0.5	280	180	5	0.31	1.42	0.07	<0.02	0.66		<1.0											
930916	160.0	1.81	2.0	0.5	280	165	10	0.40	1.81	0.05	0.12	0.75		<1.0											
931014	287.0	2.09	2.0	1.0	315	190	14	0.44	2.07	0.05	0.07	0.48	2.4	<1.0	0.93	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
931110	182.0	2.02	3.0	0.5	300	195	21	0.46	5.46	0.17	0.12	0.43		<1.0											
931208	253.0	2.16	3.0	0.5	370	250	12	0.59	2.60	<0.01	0.07	0.41		1.0									0.11	0.31	0.48
Min:	113	1.81	2	0.5	280	165	5	0.31	1.42	0.01	0.02	0.31	2.4	1	0.93	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.11	0.31	0.48
Max:	478	2.21	3	1	380	285	40	0.68	5.46	0.17	0.24	0.75	2.4	4	1.21	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.11	0.31	0.48
Aver.:	237.6	2.10	2.50	0.67	330	230	12.42	0.45	2.97	0.04	0.08	0.52	2.40	1.33	1.07	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.11	0.31	0.48
St.dev.:	97.08	0.12	0.52	0.25	37	42	9.71	0.11	1.04	0.05	0.06	0.13		1.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Numb.:	12	12	12	12	12	12	12	12	12	12	12	12	1	9	3	3	3	3	3	3	3	3	1	1	1

Table 7A.5 Measured concentrations - 1993 .

Watercourse : Otra

Annual flow . . . . . : 4738 mill. cbm **Min : 50.4 cbm/s**

Drainage area. . . . . : 3730 kv.km **Max: 432 cbm/s**

Date	Q	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd	Pb	S.P.M.	TOC	Hg	Gamm HCH	PCB (The folloving Congeners) IUPAC NOS 28	52	101	118	138	153	180	As	Cr-T	Ni
	m3/s	mS/m	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	µg/l	µg/l	µg/l
930113	158.5	3.02	5	1.0	270	165	18	0.46	7.45	0.05	0.37	1.91	2.4												
930217	168.4	2.55	3	0.5	210	128	8	0.43	5.94	0.03	0.30	0.97	2.6												
930317	197.7	2.28	3	0.5	215	131	8	0.39	5.52	0.03	0.26	1.41	2.1												
930414	174.4	2.18	4	0.5	215	131	10	0.33	4.59	0.03	0.23	0.76	1.4	1.0											
930519	164.5	2.06	3	0.5	210	123	3	0.41	3.77	0.02	0.09	1.31	1.8	<1.0	0.74	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930609	159.5	2.23	4	0.5	320	103	5	0.34	4.30	<0.01	0.07	1.01	2.8	1.0											
930714	63.72	2.27	4	0.5	175	86	5	0.37	5.15	0.03	0.27	1.01	1.2	<1.0	0.99	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930811	121.3	3.21	5	1.0	195	87	5	0.45	5.17	<0.01	0.41	1.31	4.1	<1.0											
930915	109.2	2.25	3	0.5	170	56	5	0.51	4.72	0.05	0.49	1.27	2.1	1.0											
931013	162.7	2.69	3	1.0	225	103	6	0.41	5.54	0.01	0.51	1.19	2.7	1.5	0.74	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
931110	145.6	3.14	5	0.5	290	110	5	0.39	4.17	<0.01	0.41	1.15	4.4	<1.0											
931206	168.9	2.83	4	0.5	295	180	24	0.43	6.50	0.01	0.41	0.85	3.3	<1.0									0.12	0.48	0.55
Min:	63.72	2.06	3	0.5	170	56	3	0.33	3.77	0.01	0.07	0.76	1.2	1	0.74	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.12	0.48	0.55
Max:	197.7	3.21	5	1	320	180	24	0.51	7.45	0.05	0.51	1.91	4.4	1.5	0.99	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.12	0.48	0.55
Aver.:	149.5	2.56	3.83	0.63	233	117	8.50	0.41	5.24	0.02	0.32	1.18	2.58	1.06	0.82	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.12	0.48	0.55
St.dev.:	35.73	0.41	0.83	0.23	49	34	6.26	0.05	1.05	0.02	0.14	0.30	0.98	0.17	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Numb.:	12	12	12	12	12	12	12	12	12	12	12	12	12	9	3	3	3	3	3	3	3	3	1	1	1

Table 7A.6 Measured concentrations - 1993 .

Watercourse : Orreelva

Annual flow . . . . . : 71.5 mill. cbm **Min :** 0.14 cbm/s

Drainage area. . . . . : 105 kv.km **Max:** 9.93 cbm/s

Date	Q	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd	Pb	S.P.M.	TOC	Hg	Gamm HCH	PCB (The folloving Congeners) IUPAC NOS							As	Cr-T	Ni
																28	52	101	118	138	153	180			
	m3/s	mS/m	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	µg/l	µg/l	µg/l
930118	9.38	16.4	314	137	3180	1825	43	4.31	25.4	0.11	5.66	71.1													
930215	3.96	17.7	68	35	2400	1850	33	1.71	5.57	0.02	1.03	10.1													
930316	1.67	17.5	43	11	2750	1610	28	1.44	2.15	0.01	0.45	11.1													
930413	0.93	17.7	32	4.0	1825	1245	18	1.06	0.63	0.01	0.16	3.93		1.0											
930512	2.76	20.7	31	3.0	1020	385	32	1.46	0.78	<0.01	0.09	4.26		<1.0											
930614	0.62	19.1	39	4.0	890	10	27	1.19	1.28	0.02	0.06	10.3		<1.0	2.33	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930705	0.14	22.7	49	3.0	1300	6	19	1.41	0.63	0.07	0.10	8.64		<1.0											
930809	0.74	21.7	65	6.0	110	5	38	1.00	0.50	0.05	0.07	9.56		<1.0	0.72	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930913	1.01	21.3	65	7.0	930	2	13	0.97	0.92	0.02	0.26	11.1		1.5											
931013	1.58	22.6	71	13	645	33	25	1.32	2.48	<0.01	0.46	10.2	5.5	2.0	0.52	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
931109	1.09	18.8	40	8.0	930	355	15	0.80	1.38	0.01	0.23	5.54		<1.0											
931206	3.34	20.6	38	8.0	945	220	52	1.43	0.65	<0.01	0.13	4.29		<1.0									0.37	2.12	2.09
Min:	0.14	16.4	31	3	110	2	13	0.8	0.5	0.01	0.06	3.93	5.5	1	0.52	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.37	2.12	2.09
Max:	9.38	22.7	314	137	3180	1850	52	4.31	25.4	0.11	5.66	71.1	5.5	2	2.33	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.37	2.12	2.09
Aver.:	2.27	19.73	71.25	19.92	1410	629	28.58	1.51	3.53	0.03	0.73	13.34	5.50	1.17	1.19	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.37	2.12	2.09
St.dev.:	2.52	2.15	77.81	37.88	928	767	11.77	0.92	7.03	0.03	1.58	18.40		0.35	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Numb.:	12	12	12	12	12	12	12	12	12	12	12	12	1	9	3	3	3	3	3	3	3	3	1	1	1

Table 7A.7 Measured concentrations - 1993 .

Watercourse : Suldalslågen

Annual flow . . . . . : 2154 mill. cbm **Min : 13 cbm/s**

Drainage area. . . . . : 1457 kv.km **Max: 264 cbm/s**

Date	Q	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd	Pb	S.P.M.	TOC	Hg	Gamm HCH	PCB (The folloving Congeners) IUPAC NOS 28	52	101	118	138	153	180	As	Cr-T	Ni
	m3/s	mS/m	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	µg/l	µg/l	µg/l
930215	16.06	4.41	2	0.5	355	320	3	0.60	3.81	0.02	0.16	0.62													
930608	188.5	1.98	2	0.5	200	155	5	0.36	3.40	0.14	0.18	0.75	0.5	<1.0	0.95	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930810	78.54	1.89	2	0.5	195	139	5	0.27	2.50	0.15	0.07	0.63		<1.0	0.75	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	<0.03			
931011	56.53	1.91	1	0.5	235	149	5	0.35	2.18	<0.01	0.12	0.46		1.0									0.07	0.56	0.28
Min:	16.06	1.89	1	0.5	195	139	3	0.27	2.18	0.01	0.07	0.46	0.5	1	0.75	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.07	0.56	0.28
Max:	188.5	4.41	2	0.5	355	320	5	0.6	3.81	0.15	0.18	0.75	0.5	1	0.95	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.07	0.56	0.28
Aver.:	84.92	2.55	1.75	0.50	246	191	4.50	0.40	2.97	0.08	0.13	0.62	0.50	1.00	0.85	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.07	0.56	0.28
St.dev.:	73.77	1.24	0.50	0.00	75	86	1.00	0.14	0.76	0.08	0.05	0.12		0.00											
Numb.:	4	4	4	4	4	4	4	4	4	4	4	4	1	3	2	2	2	2	2	2	2	2	1	1	1

Table 7A.8 Measured concentrations - 1993 .

Watercourse : Orkla

Annual flow . . . . . : 2120 mill. cbm **Min : 19 cbm/s**

Drainage area. . . . . : 2872 kv.km **Max: 552 cbm/s**

Date	Q	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd	Pb	S.P.M.	TOC	Hg	Gamm HCH	PCB (The folloving Congeners) IUPAC NOS 28	52	101	118	138	153	180	As	Cr-T	Ni
	m3/s	mS/m	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	µg/l	µg/l	µg/l
930119	49.00	7.5	4	1.0	240	150	8	9.35	36.2	0.07	0.05	0.92	2.1												
930216	47.00	9.1	3	0.5	285	185	5	13.0	45.4	0.11	0.05	0.79	2.6												
930316	27.00	9.3	3	0.6	323	225	10	14.9	55.4	0.12	0.08	1.84	2.4												
930410	24.00	9.9	4	2.0	275	144	3	14.9	56.2	0.14	0.09	0.95	5.1	1.0											
930524	209.0	3.1	5	3.0	175	62	3	4.90	10.7	<0.01	0.09	3.51	3.9	<1.0											
930608	73.00	5.1	4	0.5	201	79	5	5.85	10.2	<0.01	0.04	0.78	2.7	<1.0	0.34	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930712	68.00	4.9	4	1.0	180	63	5	8.53	19.6	0.13	0.04	1.21	1.9	<1.0											
930816	78.00	5.9	4	1.0	235	74	5	12.2	37.3	0.18	0.03	1.53	3.0	<1.0	0.17	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	<0.03			
930911	59.00	6.6	4	0.6	285	125	5	7.28	25.6	<0.01	<0.02	1.37	1.6	1.5											
931015	32.00	7.5	9	4.0	325	149	8	18.3	40.5	0.09	0.12	4.06	3.8	2.0	0.37	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
931117	22.00	6.8	3	1.0	400	305	9	9.28	25.7	0.17	0.04	1.33	1.9	<1.0											
931208	43.00	5.4	5	1.0	240	132	18	5.03	16.6	0.03	0.03	0.45	2.1	<1.0											
931215	43.00	5.9	4	0.5	230	141	7	3.51	12.0	0.05	0.02	1.01	3.1										0.88	0.49	1.24
Min:	22	3.1	3	0.5	175	62	3	3.51	10.2	0.01	0.02	0.45	1.6	1	0.17	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.88	0.49	1.24
Max:	209	9.9	9	4	400	305	18	18.3	56.2	0.18	0.12	4.06	5.1	2	0.37	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.88	0.49	1.24
Aver.:	59.54	6.69	4.31	1.28	261	141	7.00	9.77	30.11	0.09	0.05	1.52	2.78	1.17	0.29	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.88	0.49	1.24
St.dev.:	48.51	1.95	1.55	1.08	64	69	3.96	4.57	16.29	0.06	0.03	1.07	0.99	0.35	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Numb.:	13	13	13	13	13	13	13	13	13	13	13	13	13	9	3	3	3	3	3	3	3	3	1	1	1

Table 7A.9 Measured concentrations - 1993.

Watercourse : Vefsna

Annual flow . . . . . : 5890 mill. cbm **Min : 39.6 cbm/s**

Drainage area. . . . . : 4113 kv.km **Max: 988 cbm/s**

Date	Q	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd	Pb	S.P.M.	TOC	Hg	Gamm HCH	PCB (The folloving Congeners) IUPAC NOS 28	52	101	118	138	153	180	As	Cr-T	Ni
	m3/s	mS/m	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	µg/l	µg/l	µg/l
930113	57.44	11.2	8	4.0	305	205	8	7.41	9.81	0.05	0.97	24.4													
930215	102.7	11.1	5	2.0	220	83	8	1.20	3.34	0.02	0.29	3.51													
930315	284.3	9.73	6	1.0	290	125	20	3.01	9.08	0.03	0.57	6.32													
930413	50.91	8.92	3	2.0	320	123	10	2.14	3.18	0.03	0.17	1.32		1.0											
930510	505.7	7.67	4	2.0	147	77	5	1.22	2.34	<0.01	0.16	3.32		<1.0											
930608	373.1	5.15	2	1.0	195	55	8	2.58	5.40	0.15	0.21	1.88		1.5	0.54	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930713	695.8	2.89	7	3.0	370	35	16	5.82	9.95	0.03	0.19	3.72		<1.0											
930810	275.8	2.84	2	0.5	81	22	5	0.19	0.50	0.02	<0.02	1.01		<1.0	0.21	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930913	84.09	5.13	1	0.5	137	45	5	2.05	2.43	0.02	0.22	1.55		1.0											
931011	54.48	5.69	1	0.5	175	63	6	4.14	9.21	0.11	1.57	0.41	3.4	<1.0	0.11	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
931108	87.03	7.23	2	0.5	215	90	9	1.63	1.59	<0.01	0.11	0.31		<1.0											
931206	45.12	9.25	4	1.0	300	121	15	2.28	2.59	0.08	0.12	0.33		<1.0									0.15	0.84	0.92
Min:	45.12	2.84	1	0.5	81	22	5	0.19	0.5	0.01	0.02	0.31	3.4	1	0.11	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.15	0.84	0.92
Max:	695.8	11.2	8	4	370	205	20	7.41	9.95	0.15	1.57	24.4	3.4	1.5	0.54	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.15	0.84	0.92
Aver.:	218.0	7.23	3.75	1.50	230	87	9.58	2.81	4.95	0.05	0.38	4.01	3.40	1.06	0.29	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.15	0.84	0.92
St.dev.:	213.5	2.91	2.34	1.13	87	51	4.89	2.06	3.56	0.04	0.45	6.67		0.17	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Numb.:	12	12	12	12	12	12	12	12	12	12	12	12	1	9	3	3	3	3	3	3	3	3	1	1	1

Table 7A.10 Measured concentrations - 1993 .

Watercourse : Altaelva

Annual flow . . . . . : 3127 mill. cbm **Min : 21.7 cbm/s**

Drainage area. . . . . : 7367 kv.km **Max: 665 cbm/s**

Date	Q	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd	Pb	S.P.M.	TOC	Hg	Gamm HCH	PCB (The folloving Congeners) IUPAC NOS 28	52	101	118	138	153	180	As	Cr-T	Ni
	m3/s	mS/m	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	µg/l	µg/l	µg/l
930322	26.29	22.5	18	18	185	84	3	1.10	0.50	<0.01	0.10	0.23													
930610	344.3	4.96	9	3.0	225	41	11	2.40	0.93	0.01	0.15	5.31		1.5	0.19	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
930818	92.03	8.39	6	0.5	190	40	5	3.06	0.91	0.12	0.18	0.96		1.0	0.11	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			
931021	47.05	9.36	6	1.0	290	50	10	2.63	2.29	0.09	0.16	0.82	3.5	<1.0									0.32	1.36	0.71
Min:	26.29	4.96	6	0.5	185	40	3	1.1	0.5	0.01	0.1	0.23	3.5	1	0.11	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.32	1.36	0.71
Max:	344.3	22.5	18	18	290	84	11	3.06	2.29	0.12	0.18	5.31	3.5	1.5	0.19	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.32	1.36	0.71
Aver.:	127.4	11.30	9.75	5.63	223	54	7.25	2.30	1.16	0.06	0.15	1.83	3.50	1.17	0.15	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.32	1.36	0.71
St.dev.:	147.2	7.70	5.68	8.32	48	21	3.86	0.84	0.78	0.06	0.03	2.34		0.29											
Numb.:	4	4	4	4	4	4	4	4	4	4	4	4	1	3	2	2	2	2	2	2	2	2	1	1	1

Table 7B.1 Measured concentrations. Mean values 1978-1989.
Watercourse: Glomma
Drainage area: 41218 kv.km

Date	Q m3/s	Cond mS/m	Tot-P µg/l	PO4-P µg/l	Tot-N µg/l	NO3-N µg/l	NH4-N µg/l	Cu µg/l	Zn µg/l	Cd µg/l	Pb µg/l	S.P.M mg/l	TOC mg/l
1978	567.8		20.1		487								
1979	704.5		20.5		598								
1980	660.3		20.1		568								
1981	664.3		18.5		579								
1982	620.4		17.1		566								
1983	698.5		17.7		541								
1984	747.9												
1985	888.7												
1986	626.2	3.98	37.5	20.9	626	541	33	2.68	16.0	0.15		22.5	5.1
1987	924.8	3.88	22.2	10.2	950	398	45	2.57	30.7	0.12		10.8	6.6
1988	890.6	4.32	23.9		550							11.7	
1989	720.8		23.3	2.1	608	230						10.3	4.1

Table 7B.2 Measured concentrations. Mean values 1980-1989.
Watercourse: Otra
Drainage area: 3730 kv.km

Date	Q m3/s	Cond mS/m	Tot-P µg/l	PO4-P µg/l	Tot-N µg/l	NO3-N µg/l	NH4-N µg/l	Cu µg/l	Zn µg/l	Cd µg/l	Pb µg/l	S.P.M mg/l	TOC mg/l
1980	119.7		11.8		378								
1981	148.1		7.9		346								
1982	150.7		11.1		381								
1983	177.4		10.1		324								
1984	142.1		8.3		334								
1985	126.6		8.9		315								
1986	141.4		9.3		286								
1987	131.3	3.23	9.7		323	137							
1988	154.7	2.54	6.1		290	138							
1989	159.4	2.49	6.1		243	131							

Table 7B.3 Measured concentrations. Mean values 1974-1989.
Watercourse: Orkla
Drainage area: 2872 kv.km

Date	Q m3/s	Cond mS/m	Tot-P µg/l	PO4-P µg/l	Tot-N µg/l	NO3-N µg/l	NH4-N µg/l	Cu µg/l	Zn µg/l	Cd µg/l	Pb µg/l	S.P.M mg/l	TOC mg/l
1974	63.9	10.6						50.5	159				
1975	62.6	9.48						48.8	138				
1976	81.8	9.13						44.8	165				
1977	46.7	9.64	3.1	1.1	360	256		83.9	194	0.71	0.51		
1978	54.5	9.65	4.2	1.8	454	256		66.6	148	0.57	0.51		
1979	48.7	9.76						68.2	164	0.62	0.51		
1980	45.1	10.4	4.2	1.8	404	308		72.9	161	0.81	0.94		
1981	63.7	10.4	6.2	2.7	543	380		74.7	128	0.65	0.52		
1982	44.8	9.28	15.8	3.9	798	303		43.7	100	0.37	0.26		
1983	70.9	8.92	8.7	2.6	388	243		31.1	59	0.09	0.47		
1984	69.4	6.84	9.3	1.5	434	206		26.2	52	0.13	0.66		
1985	69.9	6.05	14.5	1.1	357	174		19.3	39	0.11	0.38		
1986	65.9	6.57	7.1	1.9	350	211		22.8	38	0.11	0.33		
1987	74.9	5.77	11.1	1.4	290	230		15.1	36	0.08	0.66		3.42
1988	56.6	6.07	6.5	1.2	305			22.3	40	0.08	0.25		3.34
1989	78.1	5.82	5.6	1.5	365			21.9	35	0.07	0.35		3.27

APPENDIX VIII : TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993 **Page:**

(1)	Glomma	"tributaries"	: Tista	- Hølenelva
(1)	Inner Oslo-fjord		: Årungelva	- Åroselva
(2)	Drammenselva	"tributary"	: Lierelva	
(3)	Numedalslågen	"tributaries"	: Sandeelva	- Farriselva
(4)	Skienselva	"tributary"	: Tokkeelva	
(5)	Otra	"tributaries"	: Gjerstade.	- Audna
(6)	Orreelva	"tributaries"	: Lygna	- Ulla
(7)	Suldalslågen	"tributaries"	: Saudaelva	- Hornindalselva
(8)	Orkla	"tributaries"	: Ørstaelva	- Salsvatnelva
(9)	Vefsna	"tributaries"	: Åbjøra	- Reisa
(10)	Alta	"tributaries	: Mattiselva	- Grense Jacobse.

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)										
		Drainage area			Discharge														
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station												
					Normal	1993	Normal	1993											
		kv.km	kv.km	kv.km	l/s	kv.km	l/s	kv.km	Cond mS/m	Tot-P µg/l	PO4-P µg/l	Tot-N µg/l	NO3-N µg/l	NH4-N µg/l	Cu µg/l	Zn µg/l	Cd µg/l	Pb µg/l	S.P.M. mg/l
Østfold	Tista, Iddefj.	1588	1582	1582	14.4	13.1	14.4		6.41	10.1	2.0	909	700	8	1.0	2.3	0.07	1.41	1.79
(1.)	Mosselva, Mossesundet	690	689	689	14.5	13.7	14.5		9.88	26.8	4.0	1180	775	129	1.2	2.5	<0.01	0.50	5.08
Oslo &	Hølenelva, Drøbaksundet Ø	137	121		14.0	13.6			29.40	91.0	57.0	3940	2990	225	2.6	5.5	0.01	0.97	11.70
Akershus	Årungelva, I. Oslofj.	52	50		13.0	11.3			25.80	42.0	4.0	3518	2683	61	1.2	0.7	<0.01	0.11	8.58
(1.)	Gjersjøelva, I. Oslofj.	86	85	85	14.0	12.3		12.3	18.40	14.0	2.0	1613	1209	39	4.5	10.1	0.15	3.74	5.51
	Ljanselva, I. Oslofj.	42	41	41	13.0	10.1		10.1	23.00	53.0	21.0	1070	600	48	1.3	4.8	0.01	0.55	12.00
	Loelva/Alna, I. Oslofj.	75	69	69	13.0	17.6		17.6	31.00	170.0	37.0	2070	975	184	3.3	12.0	0.01	1.43	46.00
	Akerselva, I. Oslofj.	227	225	225	17.5	9.0		9.0	6.00	19.0	2.0	553	280	38	1.2	9.2	0.01	0.45	2.90
	Frognerelva, I. Oslofj.	23	20	20	15.0	17.5		17.5	20.00	102.0	58.0	1580	500	80	2.7	8.5	0.02	0.98	2.60
	Lysakerelva, I. Oslofj.	178	173	173	16.8	15.2	16.8	15.2	8.10	22.0	5.0	620	350	26	2.2	10.1	<0.01	0.65	3.00
	Sandvikselva, I. Oslofj.	223	187	187	18.4	23.6	18.4	23.6	14.08	29.0	8.0	1860	1290	79	2.8	15.0	1.91	1.58	5.56
	Åroselva, I. Oslofj.	113	109	109	17.0	16.2	17.0		14.50	38.3	14.0	1213	885	78	1.2	3.5	0.02	0.25	5.41
Buskerud	Lierelva, Drammensfj. Ø	309	266	222	18.6	16.7	18.6		14.10	56.0	38.5	1273	1010	27	0.9	7.8	0.02	0.34	9.69
(2.)																			
Vestfold	Sandeelva, Sandebukta	193	190		17.0	15.0	17.0		13.70	18.0	8.0	1390	1095	78	1.8	93.2	0.15	0.88	4.72
(3.)	Aullelva, Tønsbergfj.	363	362	362	14.9	13.1	14.9		17.60	53.0	19.0	4831	2230	96	1.2	8.5	0.02	0.38	7.39
	Farriselva, Larvikfj.	491	491	491	21.6	18.8	21.6		4.01	7.2	3.2	713	418	15	1.5	5.0	0.01	0.50	0.50
Telemark	Tokkeelva, Kragerø	1238	1200	1200	26.7	21.4	26.7		2.84	5.0	0.5	405	210	24	0.3	8.1	0.01	0.18	1.17
(4.)																			
Aust-	Gjerstadelva, Søndeledfj.	419	414	291	27.0	22.1	27.0		3.37	5.0	1.0	429	230	36	0.5	9.2	0.08	0.35	1.25
Agder	Vegårdselva, Sandnesfj.	457	429	291	29.3	24.0	29.3		3.77	5.0	1.0	465	195	39	0.4	19.3	0.21	0.47	1.41
(5.)	Nidelva, Arendal	4025	4020	3956	29.8	25.3	29.8		1.99	3.0	0.5	293	178	21	0.6	8.3	0.01	0.47	1.21

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)										
		Drainage area			Discharge														
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station		Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd	Pb	S.P.M.
					Normal	1993	Normal	1993											
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		mS/m	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l
Vest-	Tovdalselva, Topdalsfj.	1856	1854	1794	33.9	28.1	33.9		2.72	4.0	0.5	385	145	39	0.4	9.2	0.13	0.66	1.12
Agder	Søgneelva, Flekkerøy	204	192	192	38.0	32.3	38.0		10.70	6.0	1.0	705	475	30	0.4	15.6	0.07	0.10	5.85
(5.)	Mandalselva, Mannefj.	1809	1800	1740	46.0	39.6	47.6		3.15	7.0	0.5	296	153	30	0.2	8.4	0.06	0.58	1.08
	Audna, Sniksfj.	450	400	59	45.0	39.2	51.8		7.95	5.0	0.5	480	320	33	0.3	11.7	0.16	0.27	1.58
(6.)	Lygna, Lyngdalsfj.	664	660	266	48.0	41.8	57.9		4.36	4.0	0.5	391	242	30	0.2	10.5	0.06	0.63	1.19
	Kvina, Fedafj.	1445	1140	1140	57.6	50.7	57.6		3.95	5.0	1.0	350	170	24	0.2	6.6	0.01	0.86	1.71
	Sira, Åna-Sira	1916	1872	1872	59.4	52.9	59.4		2.49	3.0	0.5	265	155	30	0.1	4.4	0.01	0.49	0.38
Rogaland	Sokndalselva, Sogndalsstr.	294	293	107	51.1	40.9	51.1		5.37	5.0	2.0	370	275	30	0.1	8.3	0.01	0.25	0.80
(6.)	Hellelandselva, Egersund	241	240	194	57.5	52.9	71.1		4.61	7.0	2.0	450	330	12	0.1	6.6	0.01	0.38	0.73
	Bjerkreimselva, Egersund	705	704	633	77.7	63.7	86.4		3.79	5.0	0.5	456	360	12	0.1	4.8	0.01	0.21	0.45
	Håelva, Håtangen	165	160	135	46.9	33.3	46.9	33.3	11.30	24.0	11.0	1470	1065	63	0.1	3.9	0.01	0.28	1.64
	Figgjo, Solavika	229	218	135	50.0	41.0	50.0		10.40	18.0	9.0	1090	775	66	0.7	5.9	0.01	0.65	2.44
	Ims-Lutsi. Høgsfj.Boknafj.	127	127	127	34.9	29.6	34.9		6.63	8.0	0.5	716	545	18	0.5	2.7	0.02	0.14	0.94
	Oltedalse.,Høgsfj.Boknafj.	102	101	129	70.0	61.6	70.0		3.62	15.0	2.0	396	290	29	0.3	4.3	0.03	0.21	0.70
	Dirdalse., Høgsfj.Boknafj.	158	158	95	83.0	74.7	83.0		2.98	3.0	0.5	322	232	11	0.2	2.6	0.02	0.40	0.26
	Frafjorde.,Frafj. Boknafj.	178	178	124	94.4	83.0	94.4		2.49	4.0	0.5	261	176	13	0.2	2.7	0.03	0.42	0.42
	Espedalse.,Høgsfj.Boknafj.	138	138	124	90.0	87.3	90.0		2.31	3.0	0.5	255	195	9	0.3	2.8	0.06	0.27	0.51
	Lysee., Lysefj.Boknafj.	182	182	46	74.0	65.1	74.0		2.50	3.0	1.0	310	200	9	1.0	3.0	0.06	0.30	0.51
	Årdalse., Årdalsfj.Boknafj.	519	516	501	81.4	77.3	81.4		2.81	11.0	6.0	211	160	11	1.0	3.6	0.05	1.01	5.28
	Førree., Jøsenfj.Boknafj.	163	163	163	85.8	81.5	85.8		2.30	3.0	0.5	252	249	7	0.3	0.9	<0.01	0.20	0.18
	Ulla, Jøsenfj.Boknafj.	393	393	385	83.4	79.2	83.4		2.32	3.0	0.5	320	245	13	0.4	2.7	0.08	0.30	0.43
(7.)	Saudae., Saudafj.Boknafj.	353	353		85.0	74.0	85.0		3.49	3.0	0.5	880	795	3	0.7	21.0	0.10	0.11	0.35
	Åbøelva, Saudafj.Boknafj.	82	82		85.0	74.0	85.0		1.58	3.0	1.0	240	165	8	0.1	1.3	0.01	0.11	0.33
	Vikedalse., Boknafj.	118	117		80.0	60.0	80.0		3.00	5.0	3.0	255	154	11	0.4	3.3	0.04	0.19	1.17

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)										
		Drainage area			Discharge														
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station												
					Normal	1993	Normal	1993											
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		Cond mS/m	Tot-P µg/l	PO4-P µg/l	Tot-N µg/l	NO3-N µg/l	NH4-N µg/l	Cu µg/l	Zn µg/l	Cd µg/l	Pb µg/l	S.P.M. mg/l
Hordaland (7.)	Etneelva, Etnefj. Bømlafj.	252	250	127	48.8	37.6	96.0		3.15	4.5	0.5	371	301	14	0.3	2.7	0.04	0.09	0.71
	Opo, Sørfj. Hardangerfj.	482	480	464	79.3	63.4	79.3		1.54	2.5	0.5	175	108	6	0.1	3.1	0.04	0.20	0.84
	Tysso, Sørfj. Hardangerfj.	388	385	407	79.3	63.4	79.3		1.78	2.0	0.5	200	101	5	0.1	2.7	0.04	<0.02	0.11
	Kinso, Sørfj. Hardangerfj.	281	281	232	46.0	46.0	46.0		2.01	2.0	0.5	96	63	5	0.1	1.4	0.01	0.05	0.91
	Veig, Eldfjv. Hardangerfj.	496	496	386	41.8	44.7	41.8		2.04	3.5	0.5	145	46	5	0.1	0.5	<0.01	0.07	0.32
	Bjorela, " , Hardangerfj.	592	592	592	26.0	26.0	26.0		2.04	4.0	0.5	190	46	5	0.1	0.5	<0.01	0.07	0.32
	Sima, Eldfj. Hardangerfj.	145	145	128	69.2	69.0	69.2		2.21	3.5	0.5	180	95	5	0.1	0.5	0.04	<0.02	0.61
	Austdøla, Osafj. Eldfj.	131	130	89	74.6	75.0	74.6		1.28	3.0	2.0	203	148	5	0.2	0.8	<0.01	0.04	0.16
	Norddøla, Osafj. Eldfj.	40	39	89	74.6	75.0	74.6		8.52	3.0	0.5	209	182	5	0.1	0.5	<0.01	0.02	0.34
	Tysseelva, Fusafj.	240	240		85.0	74.0	85.0		1.91	3.0	0.5	175	90	6	0.5	2.7	<0.01	0.26	1.38
	Oselva, Fusafj.	109	108	50	91.7	75.1	91.7		3.80	10.0	7.0	340	150	5	1.0	10.0	0.01	0.30	1.01
	Bergsdalse, Veafj.Herdlafj.	198	198		80.0	72.8	80.0		1.91	3.0	0.5	137	85	6	0.1	2.1	0.03	0.12	0.47
	Vosso, Veafj. Sørfj.	1492	1465	1102	58.2	53.5	58.2		1.38	2.0	0.5	128	77	8	0.2	1.3	0.02	0.08	0.56
	Ekso, Osterfj.	414	400	342	86.2	78.4	86.2		2.59	4.0	2.0	176	109	5	1.0	5.0	0.01	0.10	0.70
	Modalselva, Osterfj.	385	384	248	95.5	91.8	95.5		2.74	4.0	0.5	210	155	5	1.0	5.0	0.01	0.10	0.50

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)										
		Drainage area			Discharge														
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station												
					Normal	1993	Normal	1993											
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		Cond mS/m	Tot-P µg/l	PO4-P µg/l	Tot-N µg/l	NO3-N µg/l	NH4-N µg/l	Cu µg/l	Zn µg/l	Cd µg/l	Pb µg/l	S.P.M. mg/l
Sogn og Fjordane (7.)	Nærøye., Aurl.fj. Sognefj.	290	290	267	59.5	54.0	59.5		3.34	2.5	0.5	170	126	5	0.1	0.6	0.02	0.03	0.19
	Flåmse., Aurl.fj. Sognefj.	280	275	275	52.4	47.0	52.4		2.26	1.5	0.5	137	103	5	0.1	0.9	0.02	<0.02	1.22
	Aurlandv. Aurl.fj. Sognefj.	800	799	762	48.6	49.0	48.6		1.44	2.0	0.5	122	86	5	0.1	1.1	0.02	0.10	0.56
	Erdalse., Lærd.fj. Sognefj.	138	138		30.0	34.0	30.0		1.43	2.0	0.5	122	85	5	0.1	0.9	<0.01	0.04	0.45
	Lærdalsv. Lærd.fj. Sognefj.	1184	1172	1172	30.0	34.0	30.0		2.01	5.0	0.5	192	112	5	0.2	1.1	0.02	<0.02	1.18
	Årdalsv., Årdalsfj.Sognefj.	989	989	989	44.9	52.5	44.9		1.22	7.0	4.0	161	119	8	0.9	0.8	<0.01	0.07	2.97
	Fortunv., Lusterfj.Sognefj.	508	508	367	51.0	58.1	51.0		1.11	2.5	1.0	137	103	5	0.2	0.9	0.02	0.08	1.61
	Mørkrisv., Lusterfj.Sognefj.	282	282	203	54.7	62.9	54.7		1.28	1.5	0.5	137	103	5	0.1	0.6	0.02	<0.02	0.51
	Jostedøla, " Sognefj.	865	864	573	68.0	68.0	68.0		1.46	3.5	2.0	160	122	5	0.3	1.7	0.02	0.17	1.14
	Årøye., Sognd.fj. Sognefj.	449	446	384	77.2	73.3	77.2		1.58	2.5	0.5	120	59	6	0.2	1.5	0.02	0.03	0.46
	Sogndalse, " Sognefj.	175	172	111	66.1	56.0	66.1		1.48	5.5	3.0	225	160	5	0.2	1.1	0.10	0.06	0.77
	Gaular, Dalsfj. Bufj.	627	625	505	79.3	71.4	79.3		2.43	4.0	1.0	182	104	5	0.4	1.4	<0.01	0.14	0.38
	Jølstra, Førdefj.	714	709	384	74.3	69.0	74.3		1.88	5.5	2.0	200	111	17	0.1	2.0	0.01	0.04	0.54
	Nausta, Førdefj.	277	273	232	81.7	72.0	81.7		2.48	7.0	2.0	158	80	8	0.1	1.0	0.02	0.11	0.84
	Oselva, Høydalsfj.	287	285	225	78.7	71.6	78.7		2.33	4.5	0.5	150	49	11	0.1	2.1	0.09	0.13	0.31
	Hopse., Hyefj. Nordfj.S	73	73	161	75.0	69.0	75.0		1.71	3.0	1.0	126	90	5	0.1	0.9	0.02	0.11	0.41
	Gjengedalse.," Nordfj.S	170	168	161	75.0	69.0	75.0		1.52	4.0	1.0	285	67	11	0.3	2.2	0.08	0.19	0.11
	Breimse., Gloppenfj. "	636	634	585	68.0	65.0	68.8		1.91	4.5	0.5	260	143	11	0.1	1.6	0.07	0.13	0.51
	Oldene., Indre Nordfj.	226	225	214	70.1	68.7	70.1		1.77	4.0	0.5	200	136	6	0.1	0.5	0.01	0.03	0.59
	Loenelva, Indre Nordfj.	261	260	234	65.0	62.0	65.0		1.78	5.0	1.5	170	103	6	0.2	0.5	0.08	0.02	0.81
	Strynee., Indre Nordfj.	532	530	493	60.2	58.0	60.2		1.77	4.0	0.5	137	75	5	0.1	0.5	<0.01	0.02	8.66
	Hornindalse., Nordfj. N	428	424	378	58.1	56.3	58.1		2.24	6.0	2.0	315	175	11	0.3	1.4	0.01	0.17	1.55

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)									
		Drainage area			Discharge													
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station											
					Normal	1993	Normal	1993										
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		Cond mS/m	Tot-P µg/l	PO4-P µg/l	Tot-N µg/l	NO3-N µg/l	NH4-N µg/l	Cu µg/l	Zn µg/l	Cd µg/l	Pb µg/l	S.P.M. mg/l
Møre og Romsdal (8.)	Ørstae., Ørstafj.	160	155		70.0	61.6	70.0		3.27	16.0	8.0	231	135	14	0.5	2.7	0.04	0.17	2.93
	Valldøla, Nordalfj.Storfj.	359	357		60.0	60.0	60.0		2.01	3.0	0.5	170	108	5	0.2	0.5	<0.01	0.05	0.77
	Rauma, Romsdalsfj.Moldefj.	1202	1190	1142	32.8	36.7	32.8		1.96	2.5	0.5	104	59	5	0.3	0.9	0.15	0.16	0.37
	Isa, Isfj. Moldefj.	175	175	89	57.0	60.0	57.0		2.56	3.0	0.5	160	90	11	0.2	0.7	0.05	0.51	0.51
	Eira, Eresfj. Moldefj.	1119	1119	1085	34.8	27.8	34.8		2.61	2.5	0.5	175	112	5	0.4	3.5	0.03	0.13	0.26
	Littledalse., Sunndalsfj.	359	330	330	41.0	40.0	41.0		1.08	2.0	0.5	51	15	5	0.3	0.6	0.01	0.32	0.29
	Driva, Sunnd.fj.Tingvollfj.	2487	2435	2435	27.9	26.5	27.9		3.82	3.0	0.5	265	185	11	0.5	0.7	0.03	0.06	0.65
	Ulvåa, Alvundfj.	199	199	207	57.0	62.1	60.7		1.95	3.5	1.0	137	76	5	0.3	0.9	0.08	0.10	0.09
	Toåa, Todalsfj.	251	251	207	58.5	63.7	58.5		1.51	4.0	1.0	117	21	5	0.2	0.6	<0.01	0.04	0.39
	Surna, Surnadalsfj.	1200	1200	1125	48.0	54.2	49.3		2.57	5.0	0.5	215	119	5	0.3	0.7	0.03	<0.02	0.57
	Bøvra, Hamnesfj. Halsafj.	243	243	196	55.0	57.8	55.0		2.78	3.0	0.5	250	140	8	0.6	1.7	<0.01	0.07	1.01
Sør-Trøndelag (8.)	Børse.,Gaulosen Tr.h.fj.	110	100		30.0	34.5	30.0		11.26	15.0	2.0	410	180	7	1.7	4.4	0.03	0.49	5.01
	Vigda, Gaulosen Tr.h.fj.	150	150		30.0	34.5	30.0		19.04	20.0	5.0	499	225	7	2.0	5.0	0.03	0.22	10.01
	Gaula, Gaulosen Tr.h.fj.	3659	3650	3062	26.4	29.0	26.4		4.21	5.0	1.0	247	134	7	4.5	14.7	0.04	0.17	3.90
	Nidelva, Trondheimsfj.	3110	3100	3049	35.5	38.0	35.5		3.64	8.0	2.0	201	75	9	0.8	1.2	0.02	0.14	1.21
	Homla, Stjørd.fj.Tr.h.fj.	157	157		30.0	30.0	30.0		6.23	10.0	2.0	340	54	11	1.0	1.9	0.01	0.13	1.90
Nord-Trøndelag (8.)	Stjørdalsv, " Tr.h.fj.	2117	2117	1863	38.5	39.0	38.5		3.28	8.0	2.0	245	186	7	2.0	4.8	0.03	0.25	6.90
	Gråe., " Tr.h.fj.	93	93		25.0	25.0	25.0		11.03	10.0	3.0	585	305	11	1.6	2.9	0.03	0.63	4.90
	Verdalsvassdr., Tr.h.fj.	1472	1472	898	40.0	40.0	44.5		3.04	8.0	2.0	200	140	9	0.8	1.7	0.05	0.15	1.70
	Figga/Leksdalse.,Tr.h.fj.	282	282	178	30.0	28.5	33.6		5.69	13.0	3.0	555	310	17	1.1	2.3	0.03	0.32	7.00
	Snåsavassdr., Trondh.fj.	2153	2125	2125	35.1	41.0	35.1		4.36	5.0	1.0	219	123	11	0.5	1.1	0.04	0.08	0.78
	Årgårdselva, Namsfj.	543	510	238	43.0	38.0	50.9		5.61	15.0	3.0	303	63	9	1.5	0.8	0.01	0.09	3.90
	Namsen, Namsfj. Ø	6277	6276	5718	44.0	46.0	43.4		4.09	6.7	2.0	275	24	7	0.8	2.4	0.01	0.10	3.10
	Salsvatnelva, Follafj.	432	432	422	59.7	60.0	59.7		4.93	3.0	0.5	120	60	5	0.3	1.5	0.01	0.05	0.90

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)										
		Drainage area			Discharge														
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station												
					Normal	1993	Normal	1993											
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		Cond mS/m	Tot-P µg/l	PO4-P µg/l	Tot-N µg/l	NO3-N µg/l	NH4-N µg/l	Cu µg/l	Zn µg/l	Cd µg/l	Pb µg/l	S.P.M. mg/l
Nordland (9.)	Abjøra, Bindalsfj. S	526	520	384	80.2	80.0	80.2		1.69	4.0	0.5	65	19	5	0.2	1.2	0.03	0.14	0.83
	Skjerva, Vefsenfj. S	104	104	98	41.3	47.0	41.3		4.42	10.0	2.0	263	99	7	0.7	2.0	0.03	0.24	2.80
	Fusta, Vefsenfj. N	544	543	520	63.4	62.0	63.4		2.84	4.0	1.0	72	13	5	0.3	0.9	0.03	0.10	1.90
	Drevja, Vefsenfj. N	177	176	98	65.0	63.0	65.0		4.59	4.0	1.0	108	31	5	0.5	1.7	0.05	0.24	4.30
	Røssåga, Sørfj.	2092	2087	1880	45.4	42.0	45.4		4.17	3.0	1.0	104	39	5	0.5	2.7	0.03	0.13	2.00
	Bjerka, Sørfj.	385	385	273	55.4	52.0	55.4		3.14	3.0	0.5	80	9	5	0.5	0.6	0.03	0.06	1.50
	Dalselva, Ranafj. N	211	211	129	39.5	38.0	39.5		2.31	4.0	0.5	137	9	11	0.5	1.9	0.08	0.14	1.50
	Ranavassdraget, Ranafj. N	3847	3846	1892	51.3	47.0	44.9		2.75	4.0	2.0	77	33	7	0.7	3.0	0.03	0.19	7.10
	Fykanåga, Glomfjord	297	297	243	103.7	91.0	103.7		2.91	3.0	2.0	85	40	7	1.0	1.0	0.02	0.20	2.01
	Belare., Belarfj. Nordfj.	1064	875	797	45.1	40.0	45.1		2.45	7.0	3.3	92	39	7	1.4	7.5	0.03	0.59	10.00
	Saltdalsvassdr., Saltd.fj.S	1544	1543	1168	32.1	37.0	32.1		2.30	12.0	5.0	87	12	5	1.3	1.5	0.01	0.05	5.01
	Sulitjelmavassdr., Saltd.fj	1028	800	791	44.0	45.0	44.0		29.23	4.0	0.5	72	30	7	18.0	18.2	0.15	0.27	3.20
	Kobbe., Leirfj. Sørfolda N	405	405	386	66.9	64.0	66.9		1.82	4.0	0.5	144	29	7	0.2	1.2	0.02	0.07	0.77
	Skjoma, Ofotfj. S	845	840	797	36.3	38.0	36.3		1.32	4.0	2.0	48	16	5	0.4	1.5	0.02	0.18	2.00

Table 8.1 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)										
		Drainage area			Discharge														
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station												
					Normal	1993	Normal	1993											
		kv.km	kv.km	kv.km	l/s	kv.km	l/s	kv.km	Cond mS/m	Tot-P µg/l	PO4-P µg/l	Tot-N µg/l	NO3-N µg/l	NH4-N µg/l	Cu µg/l	Zn µg/l	Cd µg/l	Pb µg/l	S.P.M. mg/l
Troms	Spanselva, Astafj. Vågsfj.	142	142	533	50.0	48.0	50.0		6.53	4.0	1.0	47	12	5	0.4	1.0	0.05	0.16	1.50
(9.)	Salangse., Astafj. Vågsfj.	539	539	533	40.9	40.0	40.9		7.37	4.0	1.0	72	27	7	0.3	0.5	0.02	0.05	1.70
	Rossfjorde., Malangen	196	190		39.5	40.0	39.5		6.95	6.0	1.0	111	15	7	0.4	0.5	0.01	0.23	0.87
	Målse., Målselvfj. "	3239	3200	3118	28.7	30.0	28.7		6.11	4.0	2.0	126	32	9	0.4	0.6	0.01	0.13	3.30
	Bardue., Målselva	2906	2906	2049	28.3	30.0	28.3		6.20	4.0	2.0	120	30	9	0.4	0.6	0.01	0.13	3.30
	Nordkjoselva, Balsfj.	191	191	415	27.7	29.0	27.7		3.95	4.0	2.0	48	15	5	0.4	0.5	0.01	0.02	1.20
	Signaldalselva, Lyngen V	473	467	415	27.7	30.0	27.7		3.90	4.0	1.0	53	12	5	0.5	0.5	0.01	0.02	0.84
	Skibotnelva, Lyngen	770	770	724	18.0	20.0	18.0		2.77	4.0	1.0	60	19	5	0.5	0.8	0.02	0.20	1.20
	Kåfjordelva, Lyngen Ø	358	358	348	20.0	22.0	20.0		3.24	4.0	1.0	105	39	5	1.7	1.0	0.11	0.02	1.50
	Reisa, Reisafj.	2702	2702		16.0	16.0	16.0		3.85	4.0	1.0	77	23	5	0.6	0.5	0.03	0.02	1.30
Finnmark	Mattiselva, Kåfj. Altafj.	325	325	319	26.5	27.3	26.5		2.74	4.0	0.5	137	39	11	0.5	1.0	0.03	0.04	0.64
(10.)	Tverrelva, Altafj.	234	233	233	15.1	15.5	15.1		4.05	5.0	1.0	180	49	13	0.7	0.5	0.01	0.04	1.50
	Repparfjordv., Repparfj.	1090	1089		25.0	23.3	25.0		3.75	4.0	0.5	152	44	9	0.4	0.5	0.01	0.02	1.60
	Stabburse., I. Porsangen V	1108	1102	870	18.3	17.0	18.3		2.82	4.0	0.5	122	22	9	0.2	0.8	0.01	0.02	1.00
	Lakse., Indre Porsangen S	1533	1532	941	15.9	15.0	15.9		4.47	5.0	1.0	89	11	7	0.8	0.8	0.01	0.06	5.80
	Børselva.Indre Porsangen Ø	883	883	863	29.8	28.0	29.8		3.90	3.0	1.0	66	16	5	0.2	0.9	<0.01	0.02	1.00
	Mattusjåkka, I. Laksefj. V	101	101	101	22.8	22.0	22.8		4.01	3.0	1.0	60	10	5	0.5	1.0	0.02	0.04	1.00
	Storelva.Indre Laksefj. V	690	690	760	21.9	22.0	19.9		1.87	3.0	0.5	57	38	5	0.8	1.1	0.03	0.04	0.16
	Soussjåkka, I. Laksefj. V	92	92	102	25.3	26.0	22.8		5.83	3.0	0.5	104	11	11	0.3	1.6	0.02	0.04	0.95
	Adamselva, I. Laksefj. Ø	705	705	760	19.9	20.0	19.9		5.68	4.0	0.5	132	28	17	0.3	1.4	0.02	0.03	0.75
	Tanavassdraget, Tanafj. S	16389	15713	14169	11.5	11.0	11.5		4.42	5.0	1.0	176	38	19	0.8	1.1	0.03	0.04	2.10
	Vesterelva, Syltefj.	469	469	79	34.6	35.0	34.6		9.73	3.0	0.5	126	27	15	0.1	0.5	<0.01	<0.02	0.66
	V. Jakobse., Y.Varangerfj.	627	627	239	18.1	17.0	18.1		4.19	5.0	1.0	155	22	15	0.3	0.7	0.02	0.05	1.00
	Passvike., Bøkfj.Varang.fj.	18404	18400	18175	9.3	9.0	9.3		3.98	10.0	0.5	233	29	34	1.7	0.9	0.01	0.07	1.40
	Nelden, Munkfj. Varang.fj.	2960	2960	2911	9.8	9.0	9.8		2.97	5.0	0.5	182	24	11	0.7	0.9	0.08	0.09	2.10
	Grense Jakobse.,Varang.fj.	234	234		18.0	19.0	18.0		4.50	4.0	0.5	126	13	13	2.3	0.9	0.02	0.06	1.40

Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)													
		Drainage area			Discharge																	
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station				PCB (The following Congeners) IUPAC NOS											
					Normal	1993	Normal	1993	Hg	Gamma HCH	28	52	101	118	138	153	180	TOC	DOC	Cr-T	Ni	As
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	mg/l	mg/l	ug/l	ug/l	ug/l
Østfold	Tista, Iddefj.	1588	1582	1582	14.4	13.1	14.4		1.00	0.62	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	6.3		1.69	0.79	0.27
(1.)	Mosselva, Mossesundet	690	689	689	14.5	13.7	14.5		1.00	0.89	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	7.5		1.93	1.09	0.34
Oslo &	Hølenelva, Drøbaksundet Ø	137	121		14.0	13.6			2.50	0.29	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	9.9		2.81	2.66	0.59
Akershus	Årungelva, I. Oslofj.	52	50		13.0	11.3			<1.0	0.58	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	2.8		2.26	2.79	0.91
(1.)	Gjersjøelva, I. Oslofj.	86	85	85	14.0	12.3		12.3	3.50	0.60	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	4.9		2.01	1.68	0.21
	Ljanselva, I. Oslofj.	42	41	41	13.0	10.1		10.1	3.00	0.52	0.05	0.13	0.06	<0.03	0.05	0.05	<0.03	6.1		1.45	1.01	0.03
	Loelva/Alna, I. Oslofj.	75	69	69	13.0	17.6		17.6	6.30	0.42	0.28	0.19	0.27	0.19	0.29	0.22	0.12	6.5		2.78	2.01	0.44
	Akerselva, I. Oslofj.	227	225	225	17.5	9.0		9.0	1.50	0.84	0.03	0.03	0.03	<0.03	0.04	0.05	0.03	3.6		1.06	0.71	0.19
	Frognerelva, I. Oslofj.	23	20	20	15.0	17.5		17.5	3.50	0.62	<0.03	<0.03	0.11	0.07	0.10	0.11	0.05	4.1		1.48	1.87	0.49
	Lysakerelva, I. Oslofj.	178	173	173	16.8	15.2	16.8	15.2	<1.0	0.55	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.9		0.76	0.79	0.08
	Sandvikselva, I. Oslofj.	223	187	187	18.4	23.6	18.4	23.6	5.00	0.21	<0.03	<0.03	0.04	0.04	0.05	0.07	0.03	5.2		0.77	1.06	0.34
	Aroselva, I. Oslofj.	113	109	109	17.0	16.2	17.0		1.00	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	5.3		1.13	1.09	0.34
Buskerud	Lierelva, Drammensfj. Ø	309	266	222	18.6	16.7	18.6		1.50	0.26	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.7		1.19	1.17	0.19
(2.)																						
Vestfold	Sandeelva, Sandebukta	193	190		17.0	15.0	17.0		1.50	0.16	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.6		1.26	0.83	0.44
(3.)	Aullelva, Tønsbergfj.	363	362	362	14.9	13.1	14.9		1.50	0.19	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	6.1		2.56	2.43	0.39
	Farriselva, Larvikfj.	491	491	491	21.6	18.8	21.6		<1.0	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	4.1		0.31	0.45	0.15
Telemark	Tokkeelva, Kragerø	1238	1200	1200	26.7	21.4	26.7		2.00	1.00	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.4		1.12	0.29	0.31
(4.)																						
Aust-	Gjerstadelva, Søndeledfj.	419	414	291	27.0	22.1	27.0		2.00	1.00	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.8		0.79	0.51	0.39
Agder	Vegårdselva, Sandnesfj.	457	429	291	29.3	24.0	29.3		1.00	1.00	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.3		0.95	0.49	0.19
(5.)	Nidelva, Arendal	4025	4020	3956	29.8	25.3	29.8		2.00	1.00	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	2.1		0.51	0.11	0.18

Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)												
		Drainage area			Discharge																
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station				PCB (The folloving Congeners) IUPAC NOS										
					Normal	1993	Normal	1993	Hg	Gamma HCH	28	52	101	118	138	153	180	TOC	DOC	Cr-T	Ni	As
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	mg/l	mg/l	ug/l	ug/l	ug/l
Vest-	Tovdalselva, Topdalsfj.	1856	1854	1794	33.9	28.1	33.9		<1.0	1.00	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	2.6		0.84	0.22	0.35
Agder	Søgneelva, Flekkerøy	204	192	192	38.0	32.3	38.0		<1.0	0.80	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.8		1.76	0.85	0.33
(5.)	Mandalselva, Mannefj.	1809	1800	1740	46.0	39.6	47.6		3.00	0.70	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	2.4		0.66	0.07	0.19
	Audna, Sniksfj.	450	400	59	45.0	39.2	51.8		1.00	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	2.9		1.41	0.13	0.39
(6.)	Lygna, Lyngdalsfj.	664	660	266	48.0	41.8	57.9		<1.0	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	2.4		1.82	0.27	0.15
	Kvina, Fedafj.	1445	1140	1140	57.6	50.7	57.6		<1.0	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.9		1.43	0.05	0.33
	Sira, Åna-Sira	1916	1872	1872	59.4	52.9	59.4		<1.0	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.6		0.82	0.07	0.14
Rogaland	Sokndalselva, Sogndalsstr.	294	293	107	51.1	40.9	51.1		<1.0	0.90	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.6		0.81	2.78	0.07
(6.)	Hellelandselva, Egersund	241	240	194	57.5	52.9	71.1		1.00	0.90	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.7		0.85	0.47	0.21
	Bjerkreimselva, Egersund	705	704	633	77.7	63.7	86.4		1.00	0.90	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.8		0.49	0.51	0.87
	Håelva, Håtangen	165	160	135	46.9	33.3	46.9	33.3	<1.0	0.81	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	5.1		0.87	0.87	0.15
	Figgjo, Solavika	229	218	135	50.0	41.0	50.0		<1.0	0.80	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.9		1.75	0.41	0.15
	Ims-Lutsl. Høgsfj.Boknafj.	127	127	127	34.9	29.6	34.9		1.00	0.80	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.4		4.05	0.25	0.24
	Oltedalse.,Høgsfj.Boknafj.	102	101	129	70.0	61.6	70.0		<1.0	0.80	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.4		2.56	0.14	0.16
	Dirdalse., Høgsfj.Boknafj.	158	158	95	83.0	74.7	83.0		<1.0	0.70	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.8		1.68	0.03	0.13
	Frafjorde.,Fraf. Boknafj.	178	178	124	94.4	83.0	94.4		<1.0	0.60	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.3		1.47	0.03	0.11
	Espedalse.,Høgsfj.Boknafj.	138	138	124	90.0	87.3	90.0		<1.0	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.1		1.86	0.02	0.09
	Lysee., Lysefj.Boknafj.	182	182	46	74.0	65.1	74.0		<1.0	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.6		0.32	0.06	0.03
	Årdalse., Årdalsfj.Boknafj.	519	516	501	81.4	77.3	81.4		2.00	0.36	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.8		2.01	0.31	0.38
	Førree., Jøsenfj.Boknafj.	163	163	163	85.8	81.5	85.8		1.00	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.9		1.08	0.05	0.11
	Ulla, Jøsenfj.Boknafj.	393	393	385	83.4	79.2	83.4		<1.0	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.9		0.32	0.06	0.03
(7.)	Saudae., Saudafj.Boknafj.	353	353		85.0	74.0	85.0		1.00	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	2.4		1.05	0.12	0.07
	Åbøelva, Saudafj.Boknafj.	82	82		85.0	74.0	85.0		1.00	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.9		0.94	0.04	0.04
	Vikedalse., Boknafj.	118	117		80.0	60.0	80.0		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.9		2.15	0.36	0.21

Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)												
		Drainage area			Discharge																
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station				PCB (The following Congeners) IUPAC NOS										
					Normal	1993	Normal	1993	Hg	Gamma HCH	28	52	101	118	138	153	180	TOC	DOC	Cr-T	Ni	As
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	mg/l	mg/l	ug/l	ug/l	ug/l
Hordaland	Etneelva, Etnefj. Bømlafj.	252	250	127	48.8	37.6	96.0		<1.0	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.5		1.16	0.14	0.13
(7.)	Opo, Sørfj. Hardangerfj.	482	480	464	79.3	63.4	79.3		2.00	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.7		0.98	0.05	0.08
	Tysso, Sørfj. Hardangerfj.	388	385	407	79.3	63.4	79.3		1.00	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.3		0.86	0.04	0.03
	Kinso, Sørfj. Hardangerfj.	281	281	232	46.0	46.0	46.0		<1.0	0.33	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.5		0.36	<0.01	0.12
	Velg, Eldfjv. Hardangerfj.	496	496	386	41.8	44.7	41.8		1.00	0.23	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.1		0.61	0.16	<0.01
	Bjorela, " , Hardangerfj.	592	592	592	26.0	26.0	26.0		1.00	0.23	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.1		0.61	0.16	<0.01
	Sima, Eldfj. Hardangerfj.	145	145	128	69.2	69.0	69.2		<1.0	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.3		0.92	0.02	0.03
	Austdøla, Osafj. Eldfj.	131	130	89	74.6	75.0	74.6		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.2		0.03	0.03	0.14
	Norddøla, Osafj. Eldfj.	40	39	89	74.6	75.0	74.6		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.2		0.63	0.79	0.61
	Tysseelva, Fusafj.	240	240		85.0	74.0	85.0		1.00	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.9		1.37	0.04	0.08
	Oselva, Fusafj.	109	108	50	91.7	75.1	91.7		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.9		1.37	0.04	0.08
	Bergsdalse, Veafj.Herdlafj.	198	198		80.0	72.8	80.0		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.9		1.16	0.19	0.02
	Vosso, Veafj. Sørfj.	1492	1465	1102	58.2	53.5	58.2		2.50	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.9		0.83	<0.01	0.08
	Ekso, Osterfj.	414	400	342	86.2	78.4	86.2		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.1		0.05	0.01	0.15
	Modalselva, Osterfj.	385	384	248	95.5	91.8	95.5		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.5		0.05	0.01	0.15

Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)												
		Drainage area			Discharge																
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station				PCB (The folloving Congeners) IUPAC NOS										
					Normal	1993	Normal	1993	Hg	Gamma HCH	28	52	101	118	138	153	180	TOC	DOC	Cr-T	Ni	As
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	mg/l	mg/l	ug/l	ug/l	ug/l
Sogn og Fjordane (7.)	Nærøye., Aurl.fj. Sognefj.	290	290	267	59.5	54.0	59.5		1.00	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.4		1.36	0.12	0.08
	Flåmse., Aurl.fj. Sognefj.	280	275	275	52.4	47.0	52.4		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.3		0.69	0.13	0.04
	Aurlandv. Aurl.fj. Sognefj.	800	799	762	48.6	49.0	48.6		<1.0	0.12	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.4		0.49	0.03	<0.01
	Erdalse., Lærd.fj. Sognefj.	138	138		30.0	34.0	30.0		<1.0	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.9		0.54	0.04	0.19
	Lærdalsv. Lærd.fj. Sognefj.	1184	1172	1172	30.0	34.0	30.0		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.4		0.14	0.04	0.04
	Årdalsv., Årdalsfj.Sognefj.	989	989	989	44.9	52.5	44.9		3.00	0.25	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.6		0.38	0.09	0.03
	Fortunv., Lusterfj.Sognefj.	508	508	367	51.0	58.1	51.0		2.00	0.28	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.3		0.16	0.09	0.02
	Mørkrisv., Lusterfj.Sognefj.	282	282	203	54.7	62.9	54.7		1.00	0.28	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.4		0.29	0.02	<0.01
	Jostedøla, " Sognefj.	865	864	573	68.0	68.0	68.0		<1.0	0.28	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.4		0.48	0.07	0.04
	Årøye., Sognd.fj. Sognefj.	449	446	384	77.2	73.3	77.2		<1.0	0.28	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.6		0.63	0.03	0.03
	Sogndalse, " Sognefj.	175	172	111	66.1	56.0	66.1		<1.0	0.28	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	2.9		0.55	0.06	0.02
	Gaular, Dalsfj. Bufj.	627	625	505	79.3	71.4	79.3		1.00	0.36	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.1		0.37	0.12	0.07
	Jølstra, Førdefj.	714	709	384	74.3	69.0	74.3		<1.0	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.1		0.95	0.03	0.05
	Nausta, Førdefj.	277	273	232	81.7	72.0	81.7		<1.0	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.2		1.21	0.08	0.03
	Oselva, Høydalsfj.	287	285	225	78.7	71.6	78.7		<1.0	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	2.5		1.91	0.03	0.01
	Hopse., Hyefj. Nordfj.S	73	73	161	75.0	69.0	75.0		1.00	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.7		1.38	0.06	0.01
	Gjengedalse.," Nordfj.S	170	168	161	75.0	69.0	75.0		2.50	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.6		0.77	0.11	0.05
	Breimse., Gloppenfj. "	636	634	585	68.0	65.0	68.8		<1.0	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.7		0.81	0.05	0.02
	Oldene., Indre Nordfj.	226	225	214	70.1	68.7	70.1		<1.0	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.8		0.76	0.04	<0.01
	Loenelva, Indre Nordfj.	261	260	234	65.0	62.0	65.0		<1.0	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.5		0.54	0.06	0.05
	Strynee., Indre Nordfj.	532	530	493	60.2	58.0	60.2		1.00	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.5		0.73	0.07	0.04
	Hornindalse., Nordfj. N	428	424	378	58.1	56.3	58.1		1.00	0.40	0.44	0.19	0.08	0.04	0.04	0.05	0.05	1.2		1.27	0.07	0.14

Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)													
		Drainage area			Discharge																	
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station					PCB (The following Congeners) IUPAC NOS										
					Normal	1993	Normal	1993	Hg	Gamma HCH	28	52	101	118	138	153	180	TOC	DOC	Cr-T	Ni	As
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	mg/l	mg/l	ug/l	ug/l	ug/l
Møre og Romsdal (8.)	Ørstae., Ørstafj.	160	155		70.0	61.6	70.0		1.00	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.9		1.22	0.32	<0.01
	Valldøla, Nordalfj.Storfj.	359	357		60.0	60.0	60.0		<1.0	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.5		0.39	<0.01	0.02
	Rauma, Romsdalsfj.Moldefj.	1202	1190	1142	32.8	36.7	32.8		<1.0	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.7		1.21	0.07	0.04
	Isa, Isfj. Moldefj.	175	175	89	57.0	60.0	57.0		1.00	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.8		0.94	0.07	0.06
	Elra, Eresfj. Moldefj.	1119	1119	1085	34.8	27.8	34.8		1.50	0.31	0.20	0.08	0.04	<0.03	<0.03	<0.03	<0.03	0.5		0.99	<0.01	0.16
	Littledalse., Sunndalsfj.	359	330	330	41.0	40.0	41.0		<1.0	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.6		0.62	0.05	<0.01
	Driva, Sunnd.fj.Tingvollfj.	2487	2435	2435	27.9	26.5	27.9		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.1		0.67	0.16	0.01
	Ulvåa, Alvundfj.	199	199	207	57.0	62.1	60.7		1.00	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.4		0.64	0.02	0.01
	Toåa, Todalsfj.	251	251	207	58.5	63.7	58.5		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.1		0.44	0.04	0.03
	Surna, Surnadalsfj.	1200	1200	1125	48.0	54.2	49.3		4.80	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.8		0.69	0.19	0.04
	Bøvra, Hamnesfj. Halsafj.	243	243	196	55.0	57.8	55.0		<1.0	0.70	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	2.6		0.57	0.19	0.08
Sør-Trøndelag (8.)	Børse.,Gaulosen Tr.h.fj.	110	100		30.0	34.5	30.0		<1.0	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			3.03	2.34	
	Vigda, Gaulosen Tr.h.fj.	150	150		30.0	34.5	30.0		1.50	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.8		11.1	5.18	
	Gaula, Gaulosen Tr.h.fj.	3659	3650	3062	26.4	29.0	26.4		2.00	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.2		1.15	1.89	
	Nidelva, Trondheimsfj.	3110	3100	3049	35.5	38.0	35.5		3.00	0.57	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.15	1.11	
	Homla, Stjørd.fj.Tr.h.fj.	157	157		30.0	30.0	30.0		2.00	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.54	0.82	
Nord-Trøndelag (8.)	Stjørdalsv, " Tr.h.fj.	2117	2117	1863	38.5	39.0	38.5		2.50	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.56	1.24	
	Gråe., " Tr.h.fj.	93	93		25.0	25.0	25.0		<1.0	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			3.31	1.57	
	Verdalsvassdr., Tr.h.fj.	1472	1472	898	40.0	40.0	44.5		2.00	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.06	0.75	
	Figga/Leksdalse.,Tr.h.fj.	282	282	178	30.0	28.5	33.6		<1.0	0.54	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			2.45	1.17	
	Snåsavassdr., Trondh.fj.	2153	2125	2125	35.1	41.0	35.1		<1.0	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.56	0.53	
	Årgårdselva, Namsfj.	543	510	238	43.0	38.0	50.9		1.50	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			2.58	0.66	
	Namsen, Namsfj. Ø	6277	6276	5718	44.0	46.0	43.4		2.00	0.24	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.95	0.37	
	Salsvatnelva, Follafj.	432	432	422	59.7	60.0	59.7		<1.0	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			3.12	0.18	

Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)												
		Dralnage area			Discharge																
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station				PCB (The folloving Congeners) IUPAC NOS										
					Normal	1993	Normal	1993	Hg	Gamma HCH	28	52	101	118	138	153	180	TOC	DOC	Cr-T	Ni	As
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	mg/l	mg/l	ug/l	ug/l	ug/l
Nordland (9.)	Åbjøra, Bindalsfj. S	526	520	384	80.2	80.0	80.2		<1.0	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.91	0.12	
	Skjerva, Vefsenfj. S	104	104	98	41.3	47.0	41.3		2.00	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.63	0.89	
	Fusta, Vefsenfj. N	544	543	520	63.4	62.0	63.4		1.00	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.11	0.39	
	Drevja, Vefsenfj. N	177	176	98	65.0	63.0	65.0		<1.0	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.52	0.67	
	Røssåga, Sørfj.	2092	2087	1880	45.4	42.0	45.4		1.00	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.88	0.72	
	Bjerka, Sørfj.	385	385	273	55.4	52.0	55.4		1.00	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.65	0.61	
	Dalselva, Ranafj. N	211	211	129	39.5	38.0	39.5		<1.0	0.25	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.67	0.61	
	Ranavassdraget, Ranafj. N	3847	3846	1892	51.3	47.0	44.9		<1.0	0.25	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.61	0.75	
	Fykanåga, Glomfjord	297	297	243	103.7	91.0	103.7		<1.0	0.25	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.61	0.75	
	Belare., Belarfj. Nordfj.	1064	875	797	45.1	40.0	45.1		<1.0	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	2.6		3.28	2.14	
	Saltdalsvassdr., Saltd.fj.S	1544	1543	1168	32.1	37.0	32.1		<1.0	0.70	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			2.19	1.46	
	Sulitjelmavassdr., Saltd.fj	1028	800	791	44.0	45.0	44.0		1.00	0.74	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			12.4	0.56	
	Kobbe., Leirfj. Sørfolda N	405	405	386	66.9	64.0	66.9		<1.0	0.50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.88	0.14	
	Skjoma, Ofotfj. S	845	840	797	36.3	38.0	36.3		1.00	0.40	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.57	0.31	

Table 8.2 TRIBUTARY RIVERS. MEAN CONCENTRATIONS 1993.

County	Watercourse	Runoff data							Parameters (mean values)												
		Drainage area			Discharge																
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station				PCB (The folloving Congeners) IUPAC NOS										
					Normal	1993	Normal	1993	Hg	Gamma HCH	28	52	101	118	138	153	180	TOC	DOC	Cr-T	Ni	As
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	mg/l	mg/l	ug/l	ug/l	ug/l
Troms	Spanselva, Astafj. Vågsfj.	142	142	533	50.0	48.0	50.0		<1.0	0.35	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.28	0.45	
(9.)	Salangse., Astafj. Vågsfj.	539	539	533	40.9	40.0	40.9		<1.0	0.35	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.36	0.51	
	Rossfjorde., Malangen	196	190		39.5	40.0	39.5		2.00	0.33	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.16	0.53	
	Målse., Målselvfj. "	3239	3200	3118	28.7	30.0	28.7		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.26	0.52	
	Bardue., Målselva	2906	2906	2049	28.3	30.0	28.3		<1.0	0.20	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.26	0.52	
	Nordkjoselva, Balsfj.	191	191	415	27.7	29.0	27.7		<1.0	0.10	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.12	0.36	
	Signaldalselva, Lyngen V	473	467	415	27.7	30.0	27.7		<1.0	0.10	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.05	0.31	
	Skibotnelva, Lyngen	770	770	724	18.0	20.0	18.0		1.50	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.13	0.91	
	Kåfjordelva, Lyngen Ø	358	358	348	20.0	22.0	20.0		<1.0	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.34	0.57	
	Reisa, Reisafj.	2702	2702		16.0	16.0	16.0		<1.0	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.9		0.45	0.27	
Finnmark	Mattiselva, Kåfj. Altafj.	325	325	319	26.5	27.3	26.5		<1.0	0.10	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.46	0.23	
(10.)	Tverrelva, Altafj.	234	233	233	15.1	15.5	15.1		<1.0	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.92	0.47	
	Repparfjordv., Repparfj.	1090	1089		25.0	23.3	25.0		2.00	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.34	0.36	
	Stabburse., I. Porsangen V	1108	1102	870	18.3	17.0	18.3		<1.0	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	2.4		0.61	0.18	
	Lakse., Indre Porsangen S	1533	1532	941	15.9	15.0	15.9		<1.0	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.12	0.75	
	Børselva.Indre Porsangen Ø	883	883	863	29.8	28.0	29.8		<1.0	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.91	0.32	
	Mattusjåkka, I. Laksefj. V	101	101	101	22.8	22.0	22.8		<1.0	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.97	0.51	
	Storelva.Indre Laksefj. V	690	690	760	21.9	22.0	19.9		<1.0	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.02	0.56	
	Soussjåkka, I. Laksefj. V	92	92	102	25.3	26.0	22.8		<1.0	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.15	0.34	
	Adamselva, I. Laksefj. Ø	705	705	760	19.9	20.0	19.9		<1.0	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.41	0.28	
	Tanavassdraget, Tanafj. S	16389	15713	14169	11.5	11.0	11.5		2.50	0.11	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.01	0.55	
	Vesterelva, Syltefj.	469	469	79	34.6	35.0	34.6		<1.0	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.76	0.22	
	V. Jakobse., Y.Varangerfj.	627	627	239	18.1	17.0	18.1		1.00	0.30	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			1.36	0.39	
	Passvike., Bøkfj.Varang.fj.	18404	18400	18175	9.3	9.0	9.3		2.00	0.32	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	3.9		0.66	6.29	
	Neiden, Munkfj. Varang.fj.	2960	2960	2911	9.8	9.0	9.8		<1.0	0.35	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			0.89	0.41	
	Grense Jakobse.,Varang.fj.	234	234		18.0	19.0	18.0		3.00	0.35	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			2.45	8.57	

APPENDIX IX : TRIBUTARY RIVERS. ANNUAL LOAD 1993 **Page:**

(1)	Glomma	"tributaries"	: Tista	- Hølenelva
(1)	Inner Oslo-fjord		: Årungelva	- Åroselva
(2)	Drammenselva	"tributary"	: Lierelva	
(3)	Numedalslågen	"tributaries"	: Sandeelva	- Farriselva
(4)	Skienselva	"tributary"	: Tokkeelva	
(5)	Otra	"tributaries"	: Gjerstade.	- Audna
(6)	Orreelva	"tributaries"	: Lygna	- Ulla
(7)	Suldalslågen	"tributaries"	: Saudaelva	- Hornindalselva
(8)	Orkla	"tributaries"	: Ørstaelva	- Salsvatnelva
(9)	Vefsna	"tributaries"	: Åbjøra	- Reisa
(10)	Alta	"tributaries	: Mattiselva	- Grense Jacobse.

* Measurements below detection limits are treated in two ways:
"Detection limit = Zero", and "Detection limit = limit". This concerns the substances Cd, Pb, Hg and PCBs. In Tables 9.1-9.2 as well as in Tables 5.1-5.4 both "zero- and limit-values" are shown.

Table 9.1 TRIBUTARY RIVERS. ANNUAL LOAD 1993.

County	Watercourse	Runoff data								Parameters (mean values)														
		Drainage area			Discharge																			
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station												C d		P b		S.P.M.	H g	
					Normal	1993	Normal	1993	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	zero	limit	zero	limit		zero	limit
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		mS/m	tons	tons	tons	tons	Tons	tons	tons	tons	tons	tons	tons	t.tons	kg	kg
Østfold	Tista, Iddefj.	1588	1582	1582	14.4	13.1	14.4		6.41	6.6	1.3	594	457	5.23	0.63	1.53	0.046	0.046	0.922	0.922	1.17	0.654	0.654
(1.)	Mosselva, Mossesundet	690	689	689	14.5	13.7	14.5		9.88	8.0	1.2	351	231	38.40	0.34	0.76	0.000	0.003	0.149	0.149	1.51	0.298	0.298
Oslo &	Hølenelva, Drøbaksundet Ø	137	121		14.0	13.6			29.40	4.7	3.0	204	155	11.68	0.14	0.28	0.001	0.001	0.050	0.050	0.61	0.130	0.130
Akershus	Arungelva, I. Oslofj.	52	50		13.0	11.3			25.80	0.7	0.1	63	48	1.09	0.02	0.01	0.000	0.000	0.002	0.002	0.15	0.000	0.018
(1.)	Gjersjøelva, I. Oslofj.	86	85	85	14.0	12.3		12.3	18.40	0.5	0.1	53	40	1.29	0.15	0.33	0.005	0.005	0.123	0.123	0.18	0.115	0.115
	Ljanselva, I. Oslofj.	42	41	41	13.0	10.1		10.1	23.00	0.7	0.3	14	8	0.63	0.02	0.06	0.000	0.000	0.007	0.007	0.16	0.039	0.039
	Loelva/Alna, I. Oslofj.	75	69	69	13.0	17.6		17.6	31.00	6.5	1.4	79	37	7.05	0.13	0.46	0.000	0.000	0.055	0.055	1.76	0.241	0.241
	Akerselva, I. Oslofj.	227	225	225	17.5	9.0		9.0	6.00	1.2	0.1	35	18	2.43	0.08	0.58	0.001	0.001	0.029	0.029	0.19	0.096	0.096
	Frognerelva, I. Oslofj.	23	20	20	15.0	17.5		17.5	20.00	1.1	0.6	17	6	0.88	0.03	0.09	0.000	0.000	0.011	0.011	0.03	0.039	0.039
	Lysakerelva, I. Oslofj.	178	173	173	16.8	15.2	16.8	15.2	8.10	1.8	0.4	51	29	2.16	0.18	0.84	0.000	0.001	0.054	0.054	0.25	0.000	0.083
	Sandvikselva, I. Oslofj.	223	187	187	18.4	23.6	18.4	23.6	14.08	4.0	1.1	259	180	10.99	0.39	2.09	0.266	0.266	0.220	0.220	0.77	0.696	0.696
	Aroselva, I. Oslofj.	113	109	109	17.0	16.2	17.0		14.50	2.1	0.8	68	49	4.34	0.07	0.20	0.001	0.001	0.014	0.014	0.30	0.056	0.056
Buskerud	Lierelva, Drammensfj. Ø	309	266	222	18.6	16.7	18.6		14.10	7.8	5.4	178	141	3.78	0.13	1.09	0.003	0.003	0.048	0.048	1.36	0.210	0.210
(2.)																							
Vestfold	Sandeelva, Sandebukta	193	190		17.0	15.0	17.0		13.70	1.6	0.7	125	98	7.01	0.17	8.38	0.013	0.013	0.079	0.079	0.42	0.135	0.135
(3.)	Aulielva, Tønsbergfj.	363	362	362	14.9	13.1	14.9		17.60	7.9	2.8	722	333	14.36	0.18	1.28	0.003	0.003	0.057	0.057	1.11	0.224	0.224
	Farriselva, Larvikfj.	491	491	491	21.6	18.8	21.6		4.01	2.1	0.9	208	122	4.37	0.44	1.46	0.003	0.003	0.146	0.146	0.15	0.000	0.291
Telemark	Tokkeelva, Kragerø	1238	1200	1200	26.7	21.4	26.7		2.84	4.0	0.4	328	170	19.44	0.28	6.52	0.008	0.008	0.146	0.146	0.95	1.620	1.620
(4.)																							
Aust-	Gjerstadelva, Søndeledfj.	419	414	291	27.0	22.1	27.0		3.37	1.4	0.3	124	66	10.39	0.15	2.65	0.023	0.023	0.101	0.101	0.36	0.577	0.577
Agder	Vegårdselva, Sandnesfj.	457	429	291	29.3	24.0	29.3		3.77	1.6	0.3	151	63	12.66	0.13	6.26	0.068	0.068	0.153	0.153	0.46	0.325	0.325
(5.)	Nidelva, Arendal	4025	4020	3956	29.8	25.3	29.8		1.99	9.6	1.6	940	571	67.36	1.76	26.62	0.032	0.032	1.507	1.507	3.88	6.415	6.415

Table 9.1 TRIBUTARY RIVERS. ANNUAL LOAD 1993.

County	Watercourse	Runoff data								Parameters (mean values)														
		Drainage area			Discharge																			
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station			Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	C d		P b		S.P.M.	H g	
					Normal	1993	Normal	1993	Cond								zero	limit	zero	limit		zero	limit
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		mS/m	tons	tons	tons	tons	Tons	tons	tons	tons	tons	tons	tons	t.tons	kg	kg
Vest-	Tovdalselva, Topdalsfj.	1856	1854	1794	33.9	28.1	33.9		2.72	6.6	0.8	633	238	64.07	0.58	15.16	0.214	0.214	1.084	1.084	1.84	0.000	1.643
Agder	Søgneelva, Flekkerøy	204	192	192	38.0	32.3	38.0		10.70	1.2	0.2	138	93	5.87	0.08	3.05	0.014	0.014	0.020	0.020	1.14	0.000	0.196
(5.)	Mandalselva, Mannefj.	1809	1800	1740	46.0	39.6	47.6		3.15	15.7	1.1	665	344	67.44	0.45	18.88	0.135	0.135	1.304	1.304	2.43	6.744	6.744
	Audna, Sniksfj.	450	400	59	45.0	39.2	51.8		7.95	2.5	0.2	237	158	16.32	0.13	5.77	0.079	0.079	0.134	0.134	0.78	0.494	0.494
(6.)	Lygna, Lyngdalsfj.	664	660	266	48.0	41.8	57.9		4.36	3.5	0.4	340	211	26.10	0.15	9.09	0.052	0.052	0.548	0.548	1.04	0.000	0.870
	Kvina, Fedafj.	1445	1140	1140	57.6	50.7	57.6		3.95	9.1	1.8	638	310	43.75	0.29	12.01	0.018	0.018	1.568	1.568	3.12	0.000	1.823
	Sira, Ana-Sira	1916	1872	1872	59.4	52.9	59.4		2.49	9.4	1.6	828	484	93.69	0.34	13.87	0.031	0.031	1.530	1.530	1.19	0.000	3.123
Rogaland	Sokndalselva, Sogndalsstr.	294	293	107	51.1	40.9	51.1		5.37	1.9	0.8	140	104	11.34	0.04	3.15	0.004	0.004	0.094	0.094	0.30	0.000	0.378
(6.)	Hellelandselva, Egersund	241	240	194	57.5	52.9	71.1		4.61	2.8	0.8	180	132	4.80	0.04	2.65	0.004	0.004	0.152	0.152	0.29	0.400	0.400
	Bjerkreimselva, Egersund	705	704	633	77.7	63.7	86.4		3.79	7.1	0.7	645	509	16.97	0.14	6.83	0.014	0.014	0.297	0.297	0.64	1.414	1.414
	Håelva, Håtangen	165	160	135	46.9	33.3	46.9	33.3	11.30	4.0	1.8	247	179	10.59	0.02	0.66	0.002	0.002	0.047	0.047	0.28	0.000	0.168
	Figgjo, Solavika	229	218	135	50.0	41.0	50.0		10.40	5.1	2.5	307	218	18.60	0.19	1.65	0.003	0.003	0.183	0.183	0.69	0.000	0.282
	Ims-Lutsl. Høgsfj.Boknafj.	127	127	127	34.9	29.6	34.9		6.63	0.9	0.1	85	65	2.13	0.06	0.32	0.002	0.002	0.017	0.017	0.11	0.119	0.119
	Oltedalse.,Høgsfj.Boknafj.	102	101	129	70.0	61.6	70.0		3.62	2.9	0.4	78	57	5.69	0.06	0.84	0.006	0.006	0.041	0.041	0.14	0.000	0.196
	Dirdalse., Høgsfj.Boknafj.	158	158	95	83.0	74.7	83.0		2.98	1.1	0.2	120	86	4.09	0.07	0.97	0.007	0.007	0.149	0.149	0.10	0.000	0.372
	Frafjorde.,Frafj. Boknafj.	178	178	124	94.4	83.0	94.4		2.49	1.9	0.2	122	82	6.06	0.09	1.26	0.014	0.014	0.196	0.196	0.20	0.000	0.466
	Espedalse.,Høgsfj.Boknafj.	138	138	124	90.0	87.3	90.0		2.31	1.1	0.2	97	74	3.42	0.11	1.06	0.023	0.023	0.103	0.103	0.19	0.000	0.380
	Lysee., Lysefj.Boknafj.	182	182	46	74.0	65.1	74.0		2.50	1.1	0.4	116	75	3.36	0.37	1.12	0.022	0.022	0.112	0.112	0.19	0.000	0.374
	Ardalse., Ardalsfj.Boknafj.	519	516	501	81.4	77.3	81.4		2.81	13.8	7.5	265	201	13.84	1.26	4.53	0.063	0.063	1.270	1.270	6.64	2.516	2.516
	Førree., Jøsenfj.Boknafj.	163	163	163	85.8	81.5	85.8		2.30	1.3	0.2	106	104	2.93	0.13	0.38	0.000	0.004	0.084	0.084	0.08	0.419	0.419
	Ulla, Jøsenfj.Boknafj.	393	393	385	83.4	79.2	83.4		2.32	2.9	0.5	314	240	12.76	0.39	2.65	0.079	0.079	0.294	0.294	0.42	0.000	0.982
(7.)	Saudae., Saudafj.Boknafj.	353	353		85.0	74.0	85.0		3.49	2.5	0.4	725	655	2.47	0.54	17.29	0.082	0.082	0.091	0.091	0.29	0.824	0.824
	Abøelva, Saudafj.Boknafj.	82	82		85.0	74.0	85.0		1.58	0.6	0.2	46	32	1.53	0.02	0.25	0.002	0.002	0.021	0.021	0.06	0.191	0.191
	Vikedalse., Boknafj.	118	117		80.0	60.0	80.0		3.00	1.1	0.7	56	34	2.44	0.08	0.74	0.009	0.009	0.042	0.042	0.26	0.000	0.221

Table 9.1 TRIBUTARY RIVERS. ANNUAL LOAD 1993.

County	Watercourse	Runoff data								Parameters (mean values)														
		Drainage area			Discharge																			
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station																	
					Normal	1993	Normal	1993	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	C d		P b		S.P.M.	H g	
																	zero	limit	zero	limit		zero	limit
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		mS/m	tons	tons	tons	tons	Tons	tons	tons	tons	tons	tons	tons	t.tons	kg	kg
Hordaland	Etneelva, Etnefj. Bømlafj.	252	250	127	48.8	37.6	96.0		3.15	1.3	0.1	110	89	4.15	0.08	0.80	0.012	0.012	0.027	0.027	0.21	0.000	0.296
(7.)	Opo, Sørfj. Hardangerfj.	482	480	464	79.3	63.4	79.3		1.54	2.4	0.5	168	104	5.76	0.11	3.00	0.038	0.038	0.192	0.192	0.81	1.919	1.919
	Tysso, Sørfj. Hardangerfj.	388	385	407	79.3	63.4	79.3		1.78	1.5	0.4	154	78	3.85	0.08	2.08	0.031	0.031	0.000	0.015	0.08	0.770	0.770
	Kinso, Sørfj. Hardangerfj.	281	281	232	46.0	46.0	46.0		2.01	0.8	0.2	39	26	2.04	0.04	0.58	0.004	0.004	0.020	0.020	0.37	0.000	0.408
	Veig, Eidfjv. Hardangerfj.	496	496	386	41.8	44.7	41.8		2.04	2.4	0.3	101	32	3.50	0.07	0.36	0.000	0.007	0.049	0.049	0.22	0.699	0.699
	Bjorela, " , Hardangerfj.	592	592	592	26.0	26.0	26.0		2.04	1.9	0.2	92	22	2.43	0.05	0.24	0.000	0.005	0.034	0.034	0.16	0.485	0.485
	Sima, Eidfj. Hardangerfj.	145	145	128	69.2	69.0	69.2		2.21	1.1	0.2	57	30	1.58	0.03	0.16	0.013	0.013	0.000	0.006	0.19	0.000	0.316
	Austdøla, Osafj. Eidfj.	131	130	89	74.6	75.0	74.6		1.28	0.9	0.6	62	46	1.54	0.06	0.25	0.000	0.003	0.012	0.012	0.05	0.000	0.307
	Norddøla, Osafj. Eidfj.	40	39	89	74.6	75.0	74.6		8.52	0.3	0.0	19	17	0.46	0.01	0.05	0.000	0.001	0.002	0.002	0.03	0.000	0.092
	Tysseelva, Fusafj.	240	240		85.0	74.0	85.0		1.91	1.7	0.3	98	50	3.36	0.25	1.53	0.000	0.006	0.146	0.146	0.77	0.560	0.560
	Oselva, Fusafj.	109	108	50	91.7	75.1	91.7		3.80	2.6	1.8	87	38	1.28	0.26	2.56	0.003	0.003	0.077	0.077	0.26	0.000	0.256
	Bergsdalse, Veafj.Herdlafj.	198	198		80.0	72.8	80.0		1.91	1.4	0.2	62	39	2.73	0.05	0.94	0.014	0.014	0.055	0.055	0.21	0.000	0.455
	Vosso, Veafj. Sørfj.	1492	1465	1102	58.2	53.5	58.2		1.38	4.9	1.2	316	190	19.77	0.47	3.26	0.049	0.049	0.198	0.198	1.38	6.179	6.179
	Ekso, Osterfj.	414	400	342	86.2	78.4	86.2		2.59	4.0	2.0	174	108	4.94	0.99	4.94	0.010	0.010	0.099	0.099	0.69	0.000	0.989
	Modalselva, Osterfj.	385	384	248	95.5	91.8	95.5		2.74	4.4	0.6	233	172	5.56	1.11	5.56	0.011	0.011	0.111	0.111	0.56	0.000	1.112

Table 9.1 TRIBUTARY RIVERS. ANNUAL LOAD 1993.

County	Watercourse	Runoff data								Parameters (mean values)														
		Drainage area			Discharge																			
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station																	
					Normal	1993	Normal	1993	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	C d		P b		S.P.M.	H g	
					l/s kv.km		l/s kv.km										zero	limit	zero	limit		zero	limit
		kv.km	kv.km	kv.km					mS/m	tons	tons	tons	tons	Tons	tons	tons	tons	tons	tons	tons	t.tons	kg	kg
Sogn og Fjordane (7.)	Nærøye., Aurl.fj. Sognefj.	290	290	267	59.5	54.0	59.5		3.34	1.2	0.2	84	62	2.47	0.05	0.27	0.010	0.010	0.015	0.015	0.09	0.494	0.494
	Flåmse., Aurl.fj. Sognefj.	280	275	275	52.4	47.0	52.4		2.26	0.6	0.2	56	42	2.04	0.04	0.38	0.008	0.008	0.000	0.008	0.50	0.000	0.408
	Aurlandv. Aurl.fj. Sognefj.	800	799	762	48.6	49.0	48.6		1.44	2.5	0.6	151	106	6.17	0.12	1.41	0.025	0.025	0.123	0.123	0.69	0.000	1.235
	Erdalse., Lærd.fj. Sognefj.	138	138		30.0	34.0	30.0		1.43	0.3	0.1	18	13	0.74	0.01	0.13	0.000	0.001	0.006	0.006	0.07	0.000	0.148
	Lærdalsv. Lærd.fj. Sognefj.	1184	1172	1172	30.0	34.0	30.0		2.01	6.3	0.6	241	141	6.28	0.28	1.34	0.025	0.025	0.000	0.025	1.48	0.000	1.257
	Ardalsv., Ardalsfj.Sognefj.	989	989	989	44.9	52.5	44.9		1.22	11.5	6.5	264	195	13.10	1.47	1.31	0.000	0.016	0.115	0.115	4.86	4.912	4.912
	Fortunv., Lusterfj.Sognefj.	508	508	367	51.0	58.1	51.0		1.11	2.3	0.9	128	96	4.65	0.21	0.81	0.019	0.019	0.074	0.074	1.50	1.862	1.862
	Mørkrisv., Lusterfj.Sognefj.	282	282	203	54.7	62.9	54.7		1.28	0.8	0.3	77	58	2.80	0.06	0.31	0.011	0.011	0.000	0.011	0.29	0.559	0.559
	Jostedøla, " Sognefj.	865	864	573	68.0	68.0	68.0		1.46	6.5	3.7	296	226	9.26	0.57	3.09	0.037	0.037	0.315	0.315	2.11	0.000	1.853
	Arøye., Sognd.fj. Sognefj.	449	446	384	77.2	73.3	77.2		1.58	2.6	0.5	124	61	6.19	0.21	1.55	0.021	0.021	0.031	0.031	0.47	0.000	1.031
	Sogndalse, " Sognefj.	175	172	111	66.1	56.0	66.1		1.48	1.7	0.9	68	49	1.52	0.05	0.34	0.030	0.030	0.018	0.018	0.23	0.000	0.304
	Gaular, Dalsfj. Bufj.	627	625	505	79.3	71.4	79.3		2.43	5.6	1.4	256	146	7.04	0.58	1.91	0.000	0.014	0.197	0.197	0.53	1.407	1.407
	Jølstra, Førdefj.	714	709	384	74.3	69.0	74.3		1.88	8.5	3.1	309	171	26.23	0.20	3.04	0.015	0.015	0.062	0.062	0.83	0.000	1.543
	Nausta, Førdefj.	277	273	232	81.7	72.0	81.7		2.48	4.3	1.2	98	50	4.96	0.08	0.64	0.012	0.012	0.068	0.068	0.52	0.000	0.620
	Oselva, Høydalsfj.	287	285	225	78.7	71.6	78.7		2.33	2.9	0.3	97	32	7.08	0.06	1.38	0.058	0.058	0.084	0.084	0.20	0.000	0.644
	Hopse., Hyefj. Nordfj.S	73	73	161	75.0	69.0	75.0		1.71	0.5	0.2	20	14	0.79	0.02	0.14	0.003	0.003	0.017	0.017	0.07	0.159	0.159
	Gjengedalse.," Nordfj.S	170	168	161	75.0	69.0	75.0		1.52	1.5	0.4	104	24	4.02	0.10	0.81	0.029	0.029	0.069	0.069	0.04	0.914	0.914
	Breimse., Gloppenfj. "	636	634	585	68.0	65.0	68.8		1.91	5.8	0.6	338	186	14.30	0.14	2.13	0.091	0.091	0.169	0.169	0.66	0.000	1.300
	Oldene., Indre Nordfj.	226	225	214	70.1	68.7	70.1		1.77	1.9	0.2	97	66	2.92	0.05	0.24	0.005	0.005	0.015	0.015	0.29	0.000	0.487
	Loenelva, Indre Nordfj.	261	260	234	65.0	62.0	65.0		1.78	2.5	0.8	86	52	3.05	0.12	0.25	0.041	0.041	0.010	0.010	0.41	0.000	0.508
	Strynee., Indre Nordfj.	532	530	493	60.2	58.0	60.2		1.77	3.9	0.5	133	73	4.85	0.10	0.48	0.000	0.010	0.019	0.019	8.40	0.969	0.969
	Hornindalse., Nordfj. N	428	424	378	58.1	56.3	58.1		2.24	4.5	1.5	237	132	8.28	0.20	1.05	0.008	0.008	0.128	0.128	1.17	0.753	0.753

Table 9.1 TRIBUTARY RIVERS. ANNUAL LOAD 1993.

County	Watercourse	Runoff data							Parameters (mean values)														
		Drainage area			Discharge																		
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station			Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	C d		P b		S.P.M.	H g	
					Normal	1993	Normal	1993	Cond								zero	limit	zero	limit		zero	limit
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		mS/m	tons	tons	tons	tons	Tons	tons	tons	tons	tons	tons	tons	t.tons	kg	kg
Møre og Romsdal (8.)	Ørstae., Ørstafj.	160	155		70.0	61.6	70.0		3.27	4.8	2.4	70	41	4.22	0.14	0.80	0.012	0.012	0.051	0.051	0.88	0.301	0.301
	Valldøla, Nordalfj.Storfj.	359	357		60.0	60.0	60.0		2.01	2.0	0.3	115	73	3.38	0.16	0.36	0.000	0.007	0.034	0.034	0.52	0.000	0.676
	Rauma, Romsdalsfj.Moldefj.	1202	1190	1142	32.8	36.7	32.8		1.96	3.4	0.7	143	81	6.89	0.34	1.29	0.207	0.207	0.220	0.220	0.51	0.000	1.377
	Isa, Isfj. Moldefj.	175	175	89	57.0	60.0	57.0		2.56	1.0	0.2	53	30	3.64	0.05	0.24	0.017	0.017	0.169	0.169	0.17	0.331	0.331
	Eira, Eresfj. Moldefj.	1119	1119	1085	34.8	27.8	34.8		2.61	2.5	0.5	172	110	4.91	0.38	3.41	0.029	0.029	0.128	0.128	0.26	1.472	1.472
	Litledalse., Sunndalsfj.	359	330	330	41.0	40.0	41.0		1.08	0.8	0.2	21	6	2.08	0.12	0.26	0.004	0.004	0.133	0.133	0.12	0.000	0.416
	Driva, Sunnd.fj.Tingvollfj.	2487	2435	2435	27.9	26.5	27.9		3.82	6.1	1.0	539	376	22.38	0.94	1.36	0.061	0.061	0.122	0.122	1.32	0.000	2.035
	Ulvåa, Alvundfj.	199	199	207	57.0	62.1	60.7		1.95	1.4	0.4	53	30	1.95	0.12	0.36	0.031	0.031	0.039	0.039	0.04	0.390	0.390
	Toåa, Todalsfj.	251	251	207	58.5	63.7	58.5		1.51	2.0	0.5	59	11	2.52	0.11	0.31	0.000	0.005	0.020	0.020	0.20	0.000	0.504
	Surna, Surnadalsfj.	1200	1200	1125	48.0	54.2	49.3		2.57	10.3	1.0	441	244	10.26	0.59	1.39	0.062	0.062	0.000	0.041	1.17	9.845	9.845
	Bøvra, Hamnesfj. Halsafj.	243	243	196	55.0	57.8	55.0		2.78	1.3	0.2	111	62	3.54	0.24	0.74	0.000	0.004	0.031	0.031	0.45	0.000	0.443
Sør-Trøndelag (8.)	Børse.,Gaulosen Tr.h.fj.	110	100		30.0	34.5	30.0		11.26	1.6	0.2	45	20	0.76	0.18	0.48	0.003	0.003	0.053	0.053	0.55	0.000	0.109
	Vigda, Gaulosen Tr.h.fj.	150	150		30.0	34.5	30.0		19.04	3.3	0.8	81	37	1.14	0.33	0.82	0.005	0.005	0.036	0.036	1.63	0.245	0.245
	Gaula, Gaulosen Tr.h.fj.	3659	3650	3062	26.4	29.0	26.4		4.21	16.7	3.3	825	447	23.37	15.02	49.07	0.134	0.134	0.567	0.567	13.02	6.676	6.676
	Nidelva, Trondheimsfj.	3110	3100	3049	35.5	38.0	35.5		3.64	29.7	7.4	747	279	33.43	2.90	4.50	0.074	0.074	0.520	0.520	4.50	11.145	11.145
	Homla, Stjørd.fj.Tr.h.fj.	157	157		30.0	30.0	30.0		6.23	1.5	0.3	51	8	1.63	0.14	0.27	0.001	0.001	0.019	0.019	0.28	0.297	0.297
Nord-Trøndelag (8.)	Stjørdalsv, " Tr.h.fj.	2117	2117	1863	38.5	39.0	38.5		3.28	20.8	5.2	638	484	18.23	5.29	12.39	0.078	0.078	0.651	0.651	17.97	6.509	6.509
	Gråe., " Tr.h.fj.	93	93		25.0	25.0	25.0		11.03	0.7	0.2	43	22	0.81	0.12	0.21	0.002	0.002	0.046	0.046	0.36	0.000	0.073
	Verdalsvassdr., Tr.h.fj.	1472	1472	898	40.0	40.0	44.5		3.04	14.9	3.7	371	260	16.71	1.52	3.08	0.093	0.093	0.279	0.279	3.16	3.714	3.714
	Figga/Leksdalse.,Tr.h.fj.	282	282	178	30.0	28.5	33.6		5.69	3.3	0.8	141	79	4.31	0.28	0.58	0.008	0.008	0.081	0.081	1.77	0.000	0.253
	Snåsavassdr., Trondh.fj.	2153	2125	2125	35.1	41.0	35.1		4.36	13.7	2.7	602	338	30.22	1.46	3.02	0.110	0.110	0.220	0.220	2.14	0.000	2.748
	Argårdselva, Namsfj.	543	510	238	43.0	38.0	50.9		5.61	9.2	1.8	185	39	5.50	0.89	0.46	0.006	0.006	0.055	0.055	2.38	0.917	0.917
	Namsen, Namsfj. Ø	6277	6276	5718	44.0	46.0	43.4		4.09	61.0	18.2	2504	219	63.73	7.10	21.67	0.091	0.091	0.910	0.910	28.22	18.209	18.209
	Salsvatnelva, Follafj.	432	432	422	59.7	60.0	59.7		4.93	2.5	0.4	98	49	4.09	0.22	1.23	0.008	0.008	0.041	0.041	0.74	0.000	0.817

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County	Watercourse	Runoff data								Parameters (mean values)														
		Drainage area			Discharge																			
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station			Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	C d		P b		S.P.M.	H g	
					Normal	1993	Normal	1993	Cond								zero	limit	zero	limit		zero	limit
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		mS/m	tons	tons	tons	tons	Tons	tons	tons	tons	tons	tons	tons	t.tons	kg	kg
Nordland	Abjøra, Bindalsfj. S	526	520	384	80.2	80.0	80.2		1.69	5.2	0.7	85	25	6.56	0.22	1.52	0.039	0.039	0.184	0.184	1.09	0.000	1.312
(9.)	Skjerva, Vefsenfj. S	104	104	98	41.3	47.0	41.3		4.42	1.5	0.3	41	15	1.08	0.10	0.31	0.005	0.005	0.037	0.037	0.43	0.308	0.308
	Fusta, Vefsenfj. N	544	543	520	63.4	62.0	63.4		2.84	4.2	1.1	76	14	5.31	0.34	1.00	0.032	0.032	0.106	0.106	2.02	1.062	1.062
	Drevja, Vefsenfj. N	177	176	98	65.0	63.0	65.0		4.59	1.4	0.3	38	11	1.75	0.17	0.58	0.017	0.017	0.084	0.084	1.50	0.000	0.350
	Røssåga, Sørfj.	2092	2087	1880	45.4	42.0	45.4		4.17	8.3	2.8	287	108	13.82	1.24	7.52	0.083	0.083	0.359	0.359	5.53	2.764	2.764
	Bjerka, Sørfj.	385	385	273	55.4	52.0	55.4		3.14	1.9	0.3	51	6	3.16	0.30	0.39	0.019	0.019	0.038	0.038	0.95	0.631	0.631
	Dalselva, Ranafj. N	211	211	129	39.5	38.0	39.5		2.31	1.0	0.1	35	2	2.78	0.12	0.49	0.020	0.020	0.035	0.035	0.38	0.000	0.253
	Ranavassdraget, Ranafj. N	3847	3846	1892	51.3	47.0	44.9		2.75	22.8	11.4	439	188	39.90	4.05	17.22	0.171	0.171	1.083	1.083	40.47	0.000	5.701
	Fykanåga, Glomfjord	297	297	243	103.7	91.0	103.7		2.91	2.6	1.7	72	34	5.97	0.85	0.85	0.017	0.017	0.170	0.170	1.71	0.000	0.852
	Belare., Belarfj. Nordfj.	1064	875	797	45.1	40.0	45.1		2.45	7.7	3.6	102	43	7.73	1.56	8.22	0.033	0.033	0.651	0.651	11.04	0.000	1.104
	Saltdalsvassdr., Saltd.fj.S	1544	1543	1168	32.1	37.0	32.1		2.30	21.6	9.0	157	22	9.00	2.34	2.70	0.018	0.018	0.090	0.090	9.02	0.000	1.800
	Sulitjelmavassdr., Saltd.fj	1028	800	791	44.0	45.0	44.0		29.23	4.5	0.6	82	34	7.95	20.47	20.70	0.170	0.170	0.307	0.307	3.63	1.135	1.135
	Kobbe., Leirfj. Sørfolda N	405	405	386	66.9	64.0	66.9		1.82	3.3	0.4	118	24	5.72	0.13	0.96	0.016	0.016	0.057	0.057	0.63	0.000	0.817
	Skjoma, Ofotfj. S	845	840	797	36.3	38.0	36.3		1.32	4.0	2.0	48	16	5.03	0.39	1.55	0.020	0.020	0.181	0.181	2.01	1.007	1.007

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County	Watercourse	Runoff data								Parameters (mean values)														
		Drainage area			Discharge																			
		Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station																	
					Normal	1993	Normal	1993	Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	C d		P b		S.P.M.	H g	
																	zero	limit	zero	limit		zero	limit
		kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		mS/m	tons	tons	tons	tons	Tons	tons	tons	tons	tons	tons	tons	t.tons	kg	kg
Troms	Spanselva, Astafj. Vågsfj.	142	142	533	50.0	48.0	50.0		6.53	0.9	0.2	10	3	1.07	0.09	0.21	0.011	0.011	0.034	0.034	0.32	0.000	0.215
(9.)	Salangse., Astafj. Vågsfj.	539	539	533	40.9	40.0	40.9		7.37	2.7	0.7	49	18	4.76	0.20	0.34	0.014	0.014	0.034	0.034	1.16	0.000	0.680
	Rossfjorde., Malangen	196	190		39.5	40.0	39.5		6.95	1.4	0.2	27	4	1.68	0.08	0.12	0.002	0.002	0.055	0.055	0.21	0.479	0.479
	Målse., Målselvfj. "	3239	3200	3118	28.7	30.0	28.7		6.11	12.1	6.1	381	97	27.25	1.27	1.82	0.030	0.030	0.394	0.394	9.99	0.000	3.027
	Bardue., Målselva	2906	2906	2049	28.3	30.0	28.3		6.20	11.0	5.5	330	82	24.74	1.15	1.65	0.027	0.027	0.357	0.357	9.07	0.000	2.749
	Nordkjoselva, Balsfj.	191	191	415	27.7	29.0	27.7		3.95	0.7	0.3	8	3	0.87	0.07	0.09	0.002	0.002	0.003	0.003	0.21	0.000	0.175
	Signaldalselva, Lyngen V	473	467	415	27.7	30.0	27.7		3.90	1.8	0.4	23	5	2.21	0.22	0.22	0.004	0.004	0.009	0.009	0.37	0.000	0.442
	Skibotnelva, Lyngen	770	770	724	18.0	20.0	18.0		2.77	1.9	0.5	29	9	2.43	0.24	0.37	0.010	0.010	0.097	0.097	0.58	0.728	0.728
	Kåfjordelva, Lyngen Ø	358	358	348	20.0	22.0	20.0		3.24	1.0	0.2	26	10	1.24	0.42	0.24	0.027	0.027	0.005	0.005	0.37	0.000	0.248
	Reisa, Reisafj.	2702	2702		16.0	16.0	16.0		3.85	5.5	1.4	105	31	6.82	0.85	0.70	0.041	0.041	0.027	0.027	1.77	0.000	1.363
Finnmark	Mattiselva, Kåfj. Altafj.	325	325	319	26.5	27.3	26.5		2.74	1.1	0.1	38	11	3.08	0.14	0.27	0.008	0.008	0.011	0.011	0.18	0.000	0.280
(10.)	Tverrelva, Altafj.	234	233	233	15.1	15.5	15.1		4.05	0.6	0.1	21	6	1.48	0.08	0.06	0.001	0.001	0.005	0.005	0.17	0.000	0.114
	Repparfjordv., Repparfj.	1090	1089		25.0	23.3	25.0		3.75	3.2	0.4	122	35	7.20	0.31	0.40	0.008	0.008	0.016	0.016	1.28	1.600	1.600
	Stabburse., I. Porsangen V	1108	1102	870	18.3	17.0	18.3		2.82	2.4	0.3	72	13	5.32	0.14	0.46	0.006	0.006	0.012	0.012	0.59	0.000	0.591
	Lakse., Indre Porsangen S	1533	1532	941	15.9	15.0	15.9		4.47	3.6	0.7	64	8	5.07	0.54	0.58	0.007	0.007	0.043	0.043	4.20	0.000	0.725
	Børselva.Indre Porsangen Ø	883	883	863	29.8	28.0	29.8		3.90	2.3	0.8	51	12	3.90	0.15	0.67	0.000	0.008	0.016	0.016	0.78	0.000	0.780
	Mattusjåkka, I. Laksefj. V	101	101	101	22.8	22.0	22.8		4.01	0.2	0.1	4	1	0.35	0.04	0.07	0.001	0.001	0.003	0.003	0.07	0.000	0.070
	Storelva.Indre Laksefj. V	690	690	760	21.9	22.0	19.9		1.87	1.4	0.2	27	18	2.39	0.38	0.53	0.014	0.014	0.019	0.019	0.08	0.000	0.479
	Soussjåkka, I. Laksefj. V	92	92	102	25.3	26.0	22.8		5.83	0.2	0.0	8	1	0.83	0.02	0.12	0.002	0.002	0.003	0.003	0.07	0.000	0.075
	Adamselva, I. Laksefj. Ø	705	705	760	19.9	20.0	19.9		5.68	1.8	0.2	59	12	7.56	0.15	0.64	0.009	0.009	0.013	0.013	0.33	0.000	0.445
	Tanavassdraget, Tanafj. S	16389	15713	14169	11.5	11.0	11.5		4.42	27.3	5.5	959	207	103.56	4.31	5.72	0.164	0.164	0.218	0.218	11.45	13.627	13.627
	Vesterelva, Syltefj.	469	469	79	34.6	35.0	34.6		9.73	1.6	0.3	65	14	7.76	0.07	0.26	0.000	0.005	0.000	0.010	0.34	0.000	0.518
	V. Jakobse., Y.Varangerfj.	627	627	239	18.1	17.0	18.1		4.19	1.7	0.3	52	7	5.04	0.11	0.23	0.007	0.007	0.017	0.017	0.34	0.336	0.336
	Passvike., Bøkfj.Varang.fj.	18404	18400	18175	9.3	9.0	9.3		3.98	52.2	2.6	1217	151	177.56	9.09	4.70	0.052	0.052	0.366	0.366	7.31	10.445	10.445
	Nelden, Munkfj. Varang.fj.	2960	2960	2911	9.8	9.0	9.8		2.97	4.2	0.4	153	20	9.24	0.56	0.78	0.067	0.067	0.076	0.076	1.76	0.000	0.840
	Grense Jakobse.,Varang.fj.	234	234		18.0	19.0	18.0		4.50	0.6	0.1	18	2	1.82	0.32	0.12	0.003	0.003	0.008	0.008	0.20	0.421	0.421

Table 9.2 TRIBUTARY RIVERS. ANNUAL LOAD 1993.

County	Watercourse	Parameters (mean values)																								
			PCB (The folloving Congeners) IUPAC NOS																							
		Gamma	28		52		101		118		138		153		180		Sum : PCB		TOC	Cr- T		Ni		As		
		HCH	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit		zero	limit	zero	limit	zero	limit	
		kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	t.tons	tons	tons	tons	tons	tons	tons	
Østfold	Tista, Iddefj.	0.405	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.137	4.12	1.10	1.10	0.52	0.52	0.18	0.18	
(1.)	Mosselva, Mossesundet	0.265	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.063	2.23	0.57	0.57	0.32	0.32	0.10	0.10	
Oslo &	Hølenelva, Drøbaksundet Ø	0.015	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.011	0.51	0.15	0.15	0.14	0.14	0.03	0.03	
Akershus	Arungelva, I. Oslofj.	0.010	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.004	0.05	0.04	0.04	0.05	0.05	0.02	0.02	
(1.)	Gjersjøelva, I. Oslofj.	0.020	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.007	0.16	0.07	0.07	0.06	0.06	0.01	0.01	
	Ljanselva, I. Oslofj.	0.007	0.001	0.001	0.002	0.002	0.001	0.001	0.000	0.000	0.001	0.001	0.001	0.001	0.000	0.000	0.004	0.005	0.08	0.02	0.02	0.01	0.01	0.00	0.00	
	Loelva/Alna, I. Oslofj.	0.016	0.011	0.011	0.007	0.007	0.010	0.010	0.007	0.007	0.011	0.011	0.008	0.008	0.005	0.005	0.060	0.060	0.25	0.11	0.11	0.08	0.08	0.02	0.02	
	Akerselva, I. Oslofj.	0.054	0.002	0.002	0.002	0.002	0.002	0.002	0.000	0.002	0.003	0.003	0.003	0.003	0.002	0.002	0.013	0.015	0.23	0.07	0.07	0.05	0.05	0.01	0.01	
	Frognerelva, I. Oslofj.	0.007	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.006	0.05	0.02	0.02	0.02	0.02	0.01	0.01	
	Lysakerelva, I. Oslofj.	0.046	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.017	0.32	0.06	0.06	0.07	0.07	0.01	0.01	
	Sandvikselva, I. Oslofj.	0.029	0.000	0.004	0.000	0.004	0.006	0.006	0.006	0.006	0.007	0.007	0.010	0.010	0.004	0.004	0.032	0.040	0.72	0.11	0.11	0.15	0.15	0.05	0.05	
	Aroselva, I. Oslofj.	0.011	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.012	0.30	0.06	0.06	0.06	0.06	0.02	0.02	
Buskerud	Lierelva, Drammensfj. Ø	0.036	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.029	0.52	0.17	0.17	0.16	0.16	0.03	0.03	
(2.)																										
Vestfold	Sandeelva, Sandebukta	0.014	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.019	0.32	0.11	0.11	0.07	0.07	0.04	0.04	
(3.)	Aulielva, Tønsbergfj.	0.028	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.031	0.91	0.38	0.38	0.36	0.36	0.06	0.06	
	Farriselva, Larvikfj.	0.146	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.061	1.19	0.09	0.09	0.13	0.13	0.04	0.04	
Telemark	Tokkeelva, Kragerø	0.810	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.170	2.75	0.91	0.91	0.23	0.23	0.25	0.25	
(4.)																										
Aust-	Gjerstadelva, Søndeledfj.	0.289	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.061	1.10	0.23	0.23	0.15	0.15	0.11	0.11	
Agder	Vegårdselva, Sandnesfj.	0.325	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.068	1.07	0.31	0.31	0.16	0.16	0.06	0.06	
(5.)	Nidelva, Arendal	3.207	0.000	0.096	0.000	0.096	0.000	0.096	0.000	0.096	0.000	0.096	0.000	0.096	0.000	0.096	0.000	0.674	6.74	1.64	1.64	0.35	0.35	0.58	0.58	

Table 9.2 TRIBUTARY RIVERS. ANNUAL LOAD 1993.

County	Watercourse	Parameters (mean values)																						
			PCB (The following Congeners) IUPAC NOS																					
		Gamma	28		52		101		118		138		153		180		Sum : PCB		TOC	Cr- T		Ni		As	
		HCH	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit		zero	limit	zero	limit	zero	limit
		kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	t.tons	tons	tons	tons	tons	tons	tons
Vest-	Tovdalselva, Topdalsfj.	1.643	0.000	0.049	0.000	0.049	0.000	0.049	0.000	0.049	0.000	0.049	0.000	0.049	0.000	0.049	0.000	0.345	4.27	1.38	1.38	0.36	0.36	0.58	0.58
Agder	Søgneelva, Flekkerøy	0.156	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.041	0.74	0.34	0.34	0.17	0.17	0.06	0.06
(5.)	Mandalselva, Mannefj.	1.574	0.000	0.067	0.000	0.067	0.000	0.067	0.000	0.067	0.000	0.067	0.000	0.067	0.000	0.067	0.000	0.472	5.39	1.48	1.48	0.16	0.16	0.43	0.43
	Audna, Sniksfj.	0.247	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.104	1.43	0.70	0.70	0.06	0.06	0.19	0.19
(6.)	Lygna, Lyngdalsfj.	0.435	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.183	2.09	1.58	1.58	0.23	0.23	0.13	0.13
	Kvina, Fedafj.	0.911	0.000	0.055	0.000	0.055	0.000	0.055	0.000	0.055	0.000	0.055	0.000	0.055	0.000	0.055	0.000	0.383	7.11	2.61	2.61	0.09	0.09	0.60	0.60
	Sira, Ana-Sira	1.561	0.000	0.094	0.000	0.094	0.000	0.094	0.000	0.094	0.000	0.094	0.000	0.094	0.000	0.094	0.000	0.656	5.00	2.56	2.56	0.22	0.22	0.44	0.44
Rogaland	Sokndalselva, Sogndalsstr.	0.340	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.079	0.60	0.31	0.31	1.05	1.05	0.03	0.03
(6.)	Hellelandselva, Egersund	0.360	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.084	0.68	0.34	0.34	0.19	0.19	0.08	0.08
	Bjerkreimselva, Egersund	1.273	0.000	0.042	0.000	0.042	0.000	0.042	0.000	0.042	0.000	0.042	0.000	0.042	0.000	0.042	0.000	0.297	1.13	0.69	0.69	0.72	0.72	1.23	1.23
	Håelva, Håtangen	0.136	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.035	0.86	0.15	0.15	0.15	0.15	0.03	0.03
	Orreelva, Orresanden	0.085	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.015	0.39	0.15	0.15	0.15	0.15	0.03	0.03
	Figgjo, Solavika	0.225	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.059	1.10	0.49	0.49	0.12	0.12	0.04	0.04
	Ims-Lutsi. Høgsfj.Boknafj.	0.095	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.025	0.40	0.48	0.48	0.03	0.03	0.03	0.03
	Oltedalse.,Høgsfj.Boknafj.	0.157	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.041	0.27	0.50	0.50	0.03	0.03	0.03	0.03
	Dirdalse., Høgsfj.Boknafj.	0.261	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.078	0.30	0.63	0.63	0.01	0.01	0.05	0.05
	Frafjorde.,Frafj. Boknafj.	0.280	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.098	0.61	0.68	0.68	0.01	0.01	0.05	0.05
	Espedalse.,Høgsfj.Boknafj.	0.190	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.080	0.42	0.71	0.71	0.01	0.01	0.03	0.03
	Lysee., Lysefj.Boknafj.	0.149	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.078	0.60	0.12	0.12	0.02	0.02	0.01	0.01
	Ardalse., Ardalsfj.Boknafj.	0.453	0.000	0.038	0.000	0.038	0.000	0.038	0.000	0.038	0.000	0.038	0.000	0.038	0.000	0.038	0.000	0.264	1.01	2.53	2.53	0.39	0.39	0.48	0.48
	Førree., Jøsenfj.Boknafj.	0.168	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.088	0.80	0.45	0.45	0.02	0.02	0.05	0.05
	Ulla, Jøsenfj.Boknafj.	0.491	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.206	3.83	0.31	0.31	0.06	0.06	0.03	0.03
(7.)	Saudae., Saudafj.Boknafj.	0.165	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.173	1.98	0.86	0.86	0.10	0.10	0.06	0.06
	Abøelva, Saudafj.Boknafj.	0.038	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.040	0.17	0.18	0.18	0.01	0.01	0.01	0.01
	Vikedalse., Boknafj.	0.044	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.046	0.20	0.48	0.48	0.08	0.08	0.05	0.05

Table 9.2 TRIBUTARY RIVERS. ANNUAL LOAD 1993.

County	Watercourse	Parameters (mean values)																						
			PCB (The following Congeners) IUPAC NOS																					
		Gamma	28		52		101		118		138		153		180		Sum : PCB		TOC	Cr- T		Ni		As	
		HCH	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit		zero	limit	zero	limit	zero	limit
		kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	t.tons	tons	tons	tons	tons	tons	tons
Hordaland	Etneelva, Etnefj. Bømlafj.	0.148	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.062	0.15	0.34	0.34	0.04	0.04	0.04	0.04
(7.)	Opo, Sørfj. Hardangerfj.	0.384	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.202	0.67	0.94	0.94	0.05	0.05	0.08	0.08
	Tysso, Sørfj. Hardangerfj.	0.308	0.000	0.023	0.000	0.023	0.000	0.023	0.000	0.023	0.000	0.023	0.000	0.023	0.000	0.023	0.000	0.162	0.23	0.66	0.66	0.03	0.03	0.02	0.02
	Kinso, Sørfj. Hardangerfj.	0.135	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.086	0.20	0.15	0.15	0.00	0.00	0.05	0.05
	Velg, Eldfjv. Hardangerfj.	0.161	0.000	0.021	0.000	0.021	0.000	0.021	0.000	0.021	0.000	0.021	0.000	0.021	0.000	0.021	0.000	0.147	0.77	0.43	0.43	0.11	0.11	0.00	0.01
	Bjorela, " , Hardangerfj.	0.112	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.102	0.53	0.30	0.30	0.08	0.08	0.00	0.00
	Sima, Eldfj. Hardangerfj.	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.066	0.09	0.29	0.29	0.01	0.01	0.01	0.01
	Austdøla, Osafj. Eldfj.	0.061	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.065	0.06	0.01	0.01	0.01	0.01	0.04	0.04
	Norddøla, Osafj. Eldfj.	0.018	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.019	0.02	0.06	0.06	0.07	0.07	0.06	0.06
	Tysseelva, Fusafj.	0.112	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.118	0.50	0.77	0.77	0.02	0.02	0.04	0.04
	Oselva, Fusafj.	0.051	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.054	0.23	0.35	0.35	0.01	0.01	0.02	0.02
	Bergsdalse, Veafj.Herdlafj.	0.091	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.095	0.41	0.53	0.53	0.09	0.09	0.01	0.01
	Vosso, Veafj. Sørfj.	0.494	0.000	0.074	0.000	0.074	0.000	0.074	0.000	0.074	0.000	0.074	0.000	0.074	0.000	0.074	0.000	0.519	2.22	2.05	2.05	0.00	0.02	0.20	0.20
	Ekso, Osterfj.	0.198	0.000	0.030	0.000	0.030	0.000	0.030	0.000	0.030	0.000	0.030	0.000	0.030	0.000	0.030	0.000	0.208	1.09	0.05	0.05	0.01	0.01	0.15	0.15
	Modalselva, Osterfj.	0.222	0.000	0.033	0.000	0.033	0.000	0.033	0.000	0.033	0.000	0.033	0.000	0.033	0.000	0.033	0.000	0.233	0.56	0.06	0.06	0.01	0.01	0.17	0.17

Table 9.2 TRIBUTARY RIVERS. ANNUAL LOAD 1993.

County	Watercourse	Parameters (mean values)																							
			PCB (The folloving Congeners) IUPAC NOS																						
		Gamma	28		52		101		118		138		153		180		Sum : PCB		TOC	Cr- T		Ni		As	
		HCH	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit		zero	limit	zero	limit	zero	limit
		kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	t.tons	tons	tons	tons	tons	tons	tons
Sogn og Fjordane (7.)	Nærøye., Aurl.fj. Sognefj.	0.099	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.104	0.20	0.67	0.67	0.06	0.06	0.04	0.04
	Flåmse., Aurl.fj. Sognefj.	0.082	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.086	0.12	0.28	0.28	0.05	0.05	0.02	0.02
	Aurlandv. Aurl.fj. Sognefj.	0.148	0.000	0.037	0.000	0.037	0.000	0.037	0.000	0.037	0.000	0.037	0.000	0.037	0.000	0.037	0.000	0.259	0.49	0.60	0.60	0.04	0.04	0.00	0.01
	Erdalse., Lærd.fj. Sognefj.	0.022	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.031	0.13	0.08	0.08	0.01	0.01	0.03	0.03
	Lærdalsv. Lærd.fj. Sognefj.	0.251	0.000	0.038	0.000	0.038	0.000	0.038	0.000	0.038	0.000	0.038	0.000	0.038	0.000	0.038	0.000	0.264	1.76	0.18	0.18	0.05	0.05	0.05	0.05
	Ardalsv., Ardalsfj.Sognefj.	0.409	0.000	0.049	0.000	0.049	0.000	0.049	0.000	0.049	0.000	0.049	0.000	0.049	0.000	0.049	0.000	0.344	0.98	0.62	0.62	0.15	0.15	0.05	0.05
	Fortunv., Lusterfj.Sognefj.	0.261	0.000	0.028	0.000	0.028	0.000	0.028	0.000	0.028	0.000	0.028	0.000	0.028	0.000	0.028	0.000	0.195	0.28	0.15	0.15	0.08	0.08	0.02	0.02
	Mørkrisv., Lusterfj.Sognefj.	0.157	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.017	0.000	0.117	0.22	0.16	0.16	0.01	0.01	0.00	0.01
	Jostedøla, " Sognefj.	0.519	0.000	0.056	0.000	0.056	0.000	0.056	0.000	0.056	0.000	0.056	0.000	0.056	0.000	0.056	0.000	0.389	0.74	0.89	0.89	0.13	0.13	0.07	0.07
	Arøye., Sognd.fj. Sognefj.	0.289	0.000	0.031	0.000	0.031	0.000	0.031	0.000	0.031	0.000	0.031	0.000	0.031	0.000	0.031	0.000	0.217	0.62	0.65	0.65	0.03	0.03	0.03	0.03
	Sogndalse, " Sognefj.	0.085	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.064	0.88	0.17	0.17	0.02	0.02	0.01	0.01
	Gaular, Dalsfj. Bufj.	0.507	0.000	0.042	0.000	0.042	0.000	0.042	0.000	0.042	0.000	0.042	0.000	0.042	0.000	0.042	0.000	0.296	1.55	0.52	0.52	0.17	0.17	0.10	0.10
	Jølstra, Førdefj.	0.463	0.000	0.046	0.000	0.046	0.000	0.046	0.000	0.046	0.000	0.046	0.000	0.046	0.000	0.046	0.000	0.324	1.70	1.47	1.47	0.05	0.05	0.08	0.08
	Nausta, Førdefj.	0.186	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.130	0.74	0.75	0.75	0.05	0.05	0.02	0.02
	Oselva, Høydalsfj.	0.193	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.135	1.61	1.23	1.23	0.02	0.02	0.01	0.01
	Hopse., Hyefj. Nordfj.S	0.048	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.033	0.11	0.22	0.22	0.01	0.01	0.00	0.00
	Gjengedalse.," Nordfj.S	0.110	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.011	0.000	0.077	0.58	0.28	0.28	0.04	0.04	0.02	0.02
	Breimse., Gloppenfj. "	0.390	0.000	0.039	0.000	0.039	0.000	0.039	0.000	0.039	0.000	0.039	0.000	0.039	0.000	0.039	0.000	0.273	0.91	1.05	1.05	0.06	0.06	0.03	0.03
	Oldene., Indre Nordfj.	0.146	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.102	0.39	0.37	0.37	0.02	0.02	0.00	0.00
	Loenelva, Indre Nordfj.	0.153	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.107	0.25	0.27	0.27	0.03	0.03	0.03	0.03
	Strynee., Indre Nordfj.	0.291	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.204	0.48	0.71	0.71	0.07	0.07	0.04	0.04
	Hornindalse., Nordfj. N	0.301	0.331	0.331	0.143	0.143	0.060	0.060	0.030	0.030	0.030	0.030	0.038	0.038	0.038	0.038	0.670	0.670	0.90	0.96	0.96	0.05	0.05	0.11	0.11

Table 9.2 TRIBUTARY RIVERS. ANNUAL LOAD 1993.

County	Watercourse	Parameters (mean values)																							
			PCB (The folloving Congeners) IUPAC NOS																						
		Gamma	28		52		101		118		138		153		180		Sum : PCB		TOC	Cr- T		Ni		As	
		HCH	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit		zero	limit	zero	limit	zero	limit
		kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	t.tons	tons	tons	tons	tons	tons	tons
Møre og Romsdal (8.)	Ørstae., Ørstafj.	0.015	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.009	0.000	0.063	0.27	0.37	0.37	0.10	0.10	0.00	0.00
	Valldøla, Nordalfj.Storfj.	0.338	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.142	0.34	0.26	0.26	0.00	0.01	0.01	0.01
	Rauma, Romsdalsfj.Moldefj.	0.689	0.000	0.041	0.000	0.041	0.000	0.041	0.000	0.041	0.000	0.041	0.000	0.041	0.000	0.041	0.000	0.289	0.96	1.67	1.67	0.10	0.10	0.06	0.06
	Isa, Isfj. Moldefj.	0.132	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.070	0.26	0.31	0.31	0.02	0.02	0.02	0.02
	Elra, Eresfj. Moldefj.	0.304	0.196	0.196	0.078	0.078	0.039	0.039	0.000	0.029	0.000	0.029	0.000	0.029	0.000	0.029	0.314	0.432	0.49	0.97	0.97	0.00	0.01	0.16	0.16
	Littledalse., Sunndalsfj.	0.167	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.087	0.25	0.26	0.26	0.02	0.02	0.00	0.00
	Driva, Sunnd.fj.Tingvollfj.	0.407	0.000	0.061	0.000	0.061	0.000	0.061	0.000	0.061	0.000	0.061	0.000	0.061	0.000	0.061	0.000	0.427	2.24	1.36	1.36	0.33	0.33	0.02	0.02
	Ulvåa, Alvundfj.	0.078	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.012	0.000	0.082	0.55	0.25	0.25	0.01	0.01	0.00	0.00
	Toåa, Todalsfj.	0.101	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.106	0.55	0.22	0.22	0.02	0.02	0.02	0.02
	Surna, Surnadalsfj.	1.026	0.000	0.062	0.000	0.062	0.000	0.062	0.000	0.062	0.000	0.062	0.000	0.062	0.000	0.062	0.000	0.431	3.69	1.42	1.42	0.39	0.39	0.08	0.08
	Bøvra, Hamnesfj. Halsafj.	0.310	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.093	1.15	0.25	0.25	0.08	0.08	0.04	0.04
Sør-Trøndelag (8.)	Børse.,Gaulosen Tr.h.fj.	0.033	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.023		0.33	0.33	0.25	0.25		
	Vigda, Gaulosen Tr.h.fj.	0.065	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.034	0.62	1.81	1.81	0.85	0.85		
	Gaula, Gaulosen Tr.h.fj.	1.669	0.000	0.100	0.000	0.100	0.000	0.100	0.000	0.100	0.000	0.100	0.000	0.100	0.000	0.100	0.000	0.701	10.68	3.84	3.84	6.31	6.31		
	Nidelva, Trondheimsfj.	2.118	0.000	0.111	0.000	0.111	0.000	0.111	0.000	0.111	0.000	0.111	0.000	0.111	0.000	0.111	0.000	0.780		4.27	4.27	4.12	4.12		
	Homla, Stjørd.fj.Tr.h.fj.	0.074	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.031		0.23	0.23	0.12	0.12		
Nord-Trøndelag (8.)	Stjørdalsv, " Tr.h.fj.	1.041	0.000	0.078	0.000	0.078	0.000	0.078	0.000	0.078	0.000	0.078	0.000	0.078	0.000	0.078	0.000	0.547		4.06	4.06	3.23	3.23		
	Gråe., " Tr.h.fj.	0.029	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.015		0.24	0.24	0.12	0.12		
	Verdalsvassdr., Tr.h.fj.	0.928	0.000	0.056	0.000	0.056	0.000	0.056	0.000	0.056	0.000	0.056	0.000	0.056	0.000	0.056	0.000	0.390		1.97	1.97	1.39	1.39		
	Figga/Leksdalse.,Tr.h.fj.	0.137	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.053		0.62	0.62	0.30	0.30		
	Snåsavassdr., Trondh.fj.	1.374	0.000	0.082	0.000	0.082	0.000	0.082	0.000	0.082	0.000	0.082	0.000	0.082	0.000	0.082	0.000	0.577		4.29	4.29	1.46	1.46		
	Argårdselva, Namsfj.	0.122	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.128		1.58	1.58	0.40	0.40		
	Namsen, Namsfj. Ø	2.185	0.000	0.273	0.000	0.273	0.000	0.273	0.000	0.273	0.000	0.273	0.000	0.273	0.000	0.273	0.000	1.912		8.65	8.65	3.37	3.37		
	Salsvatnelva, Follafj.	0.245	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.172		2.55	2.55	0.15	0.15		

Table 9.2 TRIBUTARY RIVERS. ANNUAL LOAD 1993.

County	Watercourse	Parameters (mean values)																							
			PCB (The folloving Congeners) IUPAC NOS																						
		Gamma	28		52		101		118		138		153		180		Sum : PCB		TOC	Cr- T		Ni		As	
		HCH	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit		zero	limit	zero	limit	zero	limit
		kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	t.tons	tons	tons	tons	tons	tons	tons
Nordland	Åbjøra, Bindalsfj. S	0.394	0.000	0.039	0.000	0.039	0.000	0.039	0.000	0.039	0.000	0.039	0.000	0.039	0.000	0.039	0.000	0.275		1.19	1.19	0.16	0.16		
(9.)	Skjerva, Vefsenfj. S	0.062	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.032		0.25	0.25	0.14	0.14		
	Fusta, Vefsenfj. N	0.425	0.000	0.032	0.000	0.032	0.000	0.032	0.000	0.032	0.000	0.032	0.000	0.032	0.000	0.032	0.000	0.223		1.18	1.18	0.41	0.41		
	Drevja, Vefsenfj. N	0.140	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.073		0.53	0.53	0.23	0.23		
	Røssåga, Sørfj.	0.829	0.000	0.083	0.000	0.083	0.000	0.083	0.000	0.083	0.000	0.083	0.000	0.083	0.000	0.083	0.000	0.580		2.43	2.43	1.99	1.99		
	Bjerka, Sørfj.	0.189	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.019	0.000	0.133		0.41	0.41	0.39	0.39		
	Dalselva, Ranafj. N	0.063	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.053		0.17	0.17	0.15	0.15		
	Ranavassdraget, Ranafj. N	1.425	0.000	0.171	0.000	0.171	0.000	0.171	0.000	0.171	0.000	0.171	0.000	0.171	0.000	0.171	0.000	1.197		9.18	9.18	4.28	4.28		
	Fykanåga, Glomfjord	0.213	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.026	0.000	0.179		1.37	1.37	0.64	0.64		
	Belare., Belarfj. Nordfj.	0.552	0.000	0.033	0.000	0.033	0.000	0.033	0.000	0.033	0.000	0.033	0.000	0.033	0.000	0.033	0.000	0.232	2.87	3.62	3.62	2.36	2.36		
	Saltdalsvassdr., Saltd.fj.S	1.260	0.000	0.054	0.000	0.054	0.000	0.054	0.000	0.054	0.000	0.054	0.000	0.054	0.000	0.054	0.000	0.378		3.94	3.94	2.63	2.63		
	Sulitjelmavassdr., Saltd.fj	0.840	0.000	0.034	0.000	0.034	0.000	0.034	0.000	0.034	0.000	0.034	0.000	0.034	0.000	0.034	0.000	0.238		14.09	14.09	0.64	0.64		
	Kobbe., Leirfj. Sørfolda N	0.409	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.172		0.72	0.72	0.11	0.11		
	Skjoma, Ofotfj. S	0.403	0.000	0.030	0.000	0.030	0.000	0.030	0.000	0.030	0.000	0.030	0.000	0.030	0.000	0.030	0.000	0.211		0.57	0.57	0.31	0.31		

Table 9.2 TRIBUTARY RIVERS. ANNUAL LOAD 1993.

County	Watercourse	Parameters (mean values)																							
			PCB (The following Congeners) IUPAC NOS																						
		Gamma	28		52		101		118		138		153		180		Sum : PCB		TOC	Cr- T		Ni		As	
		HCH	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit	zero	limit		zero	limit	zero	limit	zero	limit
		kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	t.tons	tons	tons	tons	tons	tons	tons
Troms	Spanselva, Astafj. Vågsfj.	0.075	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.006	0.000	0.045		0.06	0.06	0.10	0.10		
(9.)	Salangse., Astafj. Vågsfj.	0.238	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.020	0.000	0.143		0.24	0.24	0.35	0.35		
	Rossfjorde., Malangen	0.079	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.050		0.28	0.28	0.13	0.13		
	Målse., Målselvfj. "	0.605	0.000	0.091	0.000	0.091	0.000	0.091	0.000	0.091	0.000	0.091	0.000	0.091	0.000	0.091	0.000	0.636		0.79	0.79	1.57	1.57		
	Bardue., Målselva	0.550	0.000	0.082	0.000	0.082	0.000	0.082	0.000	0.082	0.000	0.082	0.000	0.082	0.000	0.082	0.000	0.577		0.71	0.71	1.43	1.43		
	Nordkjoselva, Balsfj.	0.017	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.005	0.000	0.037		0.02	0.02	0.06	0.06		
	Signaldalselva, Lyngen V	0.044	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.093		0.02	0.02	0.14	0.14		
	Skibotnelva, Lyngen	0.024	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.102		0.06	0.06	0.44	0.44		
	Kåfjordelva, Lyngen Ø	0.012	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.007	0.000	0.052		0.08	0.08	0.14	0.14		
	Reisa, Reisafj.	0.068	0.000	0.041	0.000	0.041	0.000	0.041	0.000	0.041	0.000	0.041	0.000	0.041	0.000	0.041	0.000	0.286	2.59	0.61	0.61	0.37	0.37		
Finnmark	Mattiselva, Kåfj. Altafj.	0.028	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.008	0.000	0.059		0.13	0.13	0.06	0.06		
(10.)	Tverrelva, Altafj.	0.017	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.003	0.000	0.024		0.10	0.10	0.05	0.05		
	Repparfjordv., Repparfj.	0.120	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.024	0.000	0.168		1.07	1.07	0.29	0.29		
	Stabburse., I. Porsangen V	0.089	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.018	0.000	0.124	1.42	0.36	0.36	0.11	0.11		
	Lakse., Indre Porsangen S	0.109	0.000	0.022	0.000	0.022	0.000	0.022	0.000	0.022	0.000	0.022	0.000	0.022	0.000	0.022	0.000	0.152		0.81	0.81	0.54	0.54		
	Børselva.Indre Porsangen Ø	0.117	0.000	0.023	0.000	0.023	0.000	0.023	0.000	0.023	0.000	0.023	0.000	0.023	0.000	0.023	0.000	0.164		0.71	0.71	0.25	0.25		
	Mattusjåkka, I. Laksefj. V	0.011	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.015		0.07	0.07	0.04	0.04		
	Storelva.Indre Laksefj. V	0.072	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.014	0.000	0.101		0.49	0.49	0.27	0.27		
	Soussjåkka, I. Laksefj. V	0.011	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.002	0.000	0.016		0.09	0.09	0.03	0.03		
	Adamselva, I. Laksefj. Ø	0.067	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.093		0.63	0.63	0.12	0.12		
	Tanavassdraget, Tanafj. S	0.600	0.000	0.164	0.000	0.164	0.000	0.164	0.000	0.164	0.000	0.164	0.000	0.164	0.000	0.164	0.000	1.145		5.51	5.51	3.00	3.00		
	Vesterelva, Syltefj.	0.016	0.000	0.016	0.000	0.016	0.000	0.016	0.000	0.016	0.000	0.016	0.000	0.016	0.000	0.016	0.000	0.109		0.91	0.91	0.11	0.11		
	V. Jakobse., Y.Varangerfj.	0.101	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.010	0.000	0.071		0.46	0.46	0.13	0.13		
	Passvike., Bøkfj.Varang.fj.	1.671	0.000	0.157	0.000	0.157	0.000	0.157	0.000	0.157	0.000	0.157	0.000	0.157	0.000	0.157	0.000	1.097	20.37	3.45	3.45	32.85	32.85		
	Neiden, Munkfj. Varang.fj.	0.294	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.025	0.000	0.176		0.75	0.75	0.34	0.34		
	Grense Jakobse.,Varang.fj.	0.049	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.029		0.34	0.34	1.20	1.20		

APPENDIX X : "MEAN" TOTAL DISCHARGES (Mean concentrations of main and tributary rivers multiplied with mean runoff 1961-90 (main rivers), 1931-60 (tributary rivers) **Page:**

* Measurements below detection limits are treated in two ways: "Detection limit = Zero", and "Detection limit = limit". This concerns the substances Cd, Pb, Hg and PCBs. In Table 10.5A the "limit-values" are shown, in Table 10.5B the "zero-values" are presented.

Table X "MEAN" TOTAL DISCHARGES from MAINLAND NORWAY to convention waters (Mean runoff 1961 - 90, main rivers, 1931 - 60, tributary rivers (Fig. I)).

Substance:	Area runoff	Direct Discharges	Tributary Inputs		Main Riverine Inputs		Grand Total	
Cadmium		0.4	4.3	*	2.6	*	7.4	tonnes
Cadmium			4.4	**	2.6	**	7.5	tonnes
Mercury		154	145	*	81	*	380	kg
Mercury			210	**	105	**	469	kg
Copper		34	111		126		271	tonnes
Zinc		78	460		360		897	tonnes
Lead		10.1	27.5	*	21.3	*	58.9	tonnes
Lead			27.6	**	21.3	**	59.0	tonnes
Arsenic		0.5	9.5		12.8	*	22.8	tonnes
Arsenic			9.5		12.8	**	22.3	tonnes
Cr-T		5.1	151.2	*	37.9	*	194.2	tonnes
Cr-T			151.2	**	37.9	**	189.1	tonnes
Ni		24.6	92.4	*	52.4	*	169.4	tonnes
Ni			92.5	**	52.4	**	169.5	tonnes
PCBs ***			1.2	*	0.1	*	1.3	kg
PCBs			30.2	**	12.7	**	42.9	kg
gamma-HCH			53		41		94	kg
NH4-N	1726	11302	1781		1127		15936	tonnes
NO3-N	15085	184	16341		15151		46761	tonnes
PO4-P	206	762	200		290		1458	tonnes
Total N	24158	17915	32183		25064		99320	tonnes
Total P	783	1638	754		639		3814	tonnes
S.P.M.		5169179	292023		347905		5809106	tonnes
TOC		17970	148		193675		211793	tonnes
COD		245399					245399	tonnes
BOD		40830					40830	tonnes
AOX		293					293	tonnes

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

Table 10.1 "MEAN" TOTAL DISCHARGES to The Skagerrak Region (Mean runoff 1961 - 90, main rivers, 1931 - 60, tributary rivers (Fig. I.I)).

The Skagerrak Region with main rivers (1) Glomma, (2) Drammenselva, (3) Numedalslågen, (4) Skienselva, (5) Otra

Substance:	Area runoff	Direct Discharges	Tributary Inputs		Main Riverine Inputs		Grand Total	
Cadmium		0.09	1.0	*	1.8	*	2.8	tonnes
Cadmium			1.0	**	1.8	**	2.8	tonnes
Mercury		87.30	22	*	78	*	187	kg
Mercury			25	**	92	**	204	kg
Copper		20.74	8		82		110	tonnes
Zinc		15.84	122		258		396	tonnes
Lead		1.01	7.4	*	18.1	*	26.5	tonnes
Lead			7.4	**	18.1	**	26.5	tonnes
Arsenic		0.17	3.3	*	9.1	*	12.6	tonnes
Arsenic			3.3	**	9.1	**	12.4	tonnes
Cr-T		3.05	11.7	*	26.6	*	41.4	tonnes
Cr-T			11.7	**	26.6	**	41.4	tonnes
Ni		9.71	4.4	*	41.7	*	46.2	tonnes
Ni			4.4	**	41.7	**	55.9	tonnes
PCBs ***			0.1	*	0.0	*	0.1	kg
PCBs			2.8	**	9.9	**	12.8	kg
gamma-HCH			11		36		47	kg
NH4-N	181	4894	435		1000		6510	tonnes
NO3-N	1824	141	4117		13615		19697	tonnes
PO4-P	19	150	27		260		456	tonnes
Total N	2835	7866	7080		21790		39572	tonnes
Total P	75	410	111		569		1164	tonnes
S.P.M.		15461	24429		313686		353576	tonnes
TOC		6601	41		157193		163835	tonnes
COD		150174					150174	tonnes
BOD		14092					14092	tonnes
AOX		293					293	tonnes

Measurements below detection limits are treated in two ways :
*) Detection limit = Zero
**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

Table 10.2 "MEAN" TOTAL DISCHARGES to The Remaining North Sea (Mean runoff 1961 - 90, main rivers, 1931 - 60, tributary rivers (Fig. I.II)).

The North Sea Region with main rivers : (6) Orreelva, (7) Suldalslågen

Substance:	Area runoff	Direct Discharges	Tributary Inputs		Main Riverine Inputs		Grand Total	
Cadmium		0.23	1.1	*	0.2	*	1.6	tonnes
Cadmium			1.2	**	0.2	**	1.6	tonnes
Mercury		46.56	28	*	0	*	75	kg
Mercury			54	**	3	**	104	kg
Copper		7.12	13		1		21	tonnes
Zinc		19.90	144		9		173	tonnes
Lead		8.53	10.2	*	0.4	*	19.2	tonnes
Lead			10.3	**	0.4	**	19.3	tonnes
Arsenic		0.00	5.5	*	0.2	*	5.8	tonnes
Arsenic			5.6	**	0.2	**	5.8	tonnes
Cr-T		1.46	37.2	*	1.8	*	40.4	tonnes
Cr-T			37.2	**	1.8	**	40.4	tonnes
Ni		13.02	5.8	*	1.0	*	6.8	tonnes
Ni			5.9	**	1.0	**	19.9	tonnes
PCBs ***			0.0	*	0.1	*	0.1	kg
PCBs			9.1	**	0.6	**	9.7	kg
gamma-HCH			16		2		18	kg
NH4-N	628	3006	521		17		4173	tonnes
NO3-N	5761	20	7294		594		13669	tonnes
PO4-P	56	261	56		4		377	tonnes
Total N	9300	4443	11040		838		25622	tonnes
Total P	199	541	186		14		940	tonnes
S.P.M.		1822570	39171		3302		1865043	tonnes
TOC		5353	56		2024		7433	tonnes
COD		36494					36494	tonnes
BOD		12723					12723	tonnes

Measurements below detection limits are treated in two ways :
*) Detection limit = Zero
**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

Table 10.3 "MEAN" TOTAL DISCHARGES to The Norwegian Sea (Mean runoff 1961 - 90, main rivers, 1931 - 60, tributary rivers (Fig. I.III)).

The Norwegian Sea Region with main rivers (8) Orkla, (9) Vefsna

Substance:	Area runoff	Direct Discharges	Tributary Inputs		Main Riverine Inputs		Grand Total	
Cadmium		0.08	1.9	*	0.5	*	2.4	tonnes
Cadmium			1.9	**	0.5	**	2.4	tonnes
Mercury		18.93	67	*	0	*	86	kg
Mercury			99	**	8	**	125	kg
Copper		5.44	74		36		116	tonnes
Zinc		41.41	177		90		309	tonnes
Lead		0.56	9.0	*	2.3	*	11.9	tonnes
Lead			9.1	**	2.3	**	11.9	tonnes
Arsenic		0.33	0.6	*	2.6	*	3.5	tonnes
Arsenic			0.6	**	2.6	**	3.2	tonnes
Cr-T		0.54	85.8	*	5.7	*	92.1	tonnes
Cr-T			85.8	**	5.7	**	92.1	tonnes
Ni		1.84	41.5	*	7.7	*	49.2	tonnes
Ni			41.5	**	7.7	**	51.1	tonnes
PCBs ***			1.1	*	0.1	*	1.1	kg
PCBs			14.6	**	1.6	**	16.2	kg
gamma-HCH			23		2		25	kg
NH4-N	825	3250	470		71		4616	tonnes
NO3-N	6490	22	4390		794		11695	tonnes
PO4-P	113	336	104		11		563	tonnes
Total N	10342	5400	11013		1825		28580	tonnes
Total P	421	660	349		30		1460	tonnes
S.P.M.		1116615	197912		25900		1340427	tonnes
TOC		5676	29		24863		30568	tonnes
COD		57193					57193	tonnes
BOD		13315					13315	tonnes
AOX		1					1	tonnes

Measurements below detection limits are treated in two ways :
*) Detection limit = Zero
**) Detection limit = Limit

*** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180

Table 10.4 "MEAN" TOTAL DISCHARGES to The Barents Sea (Mean runoff 1961 - 90, main rivers, 1931 - 60, tributary rivers (Fig. I.IV)).

The Barents Sea Region with main river (10) Alta

Substance:	Area runoff	Direct Discharges	Tributary Inputs		Main Riverine Inputs		Grand Total	
Cadmium		0.00	0.4	*	0.16	*	0.5	tonnes
Cadmium			0.4	**	0.16	**	0.5	tonnes
Mercury		1.35	28	*	2.74	*	32	kg
Mercury			33	**	2.74	**	37	kg
Copper		0.37	17		6.31		24	tonnes
Zinc		0.43	16		3.18		20	tonnes
Lead		0.01	0.9	*	0.41	*	1.3	tonnes
Lead			0.9	**	0.41	**	1.3	tonnes
Arsenic		0.00	0.0	*	0.88	*	0.9	tonnes
Arsenic			0.0	**	0.88	**	0.9	tonnes
Cr-T		0.04	16.5	*	3.73	*	20.3	tonnes
Cr-T			16.5	**	3.73	**	20.3	tonnes
Ni		0.06	40.7	*	1.95	*	42.6	tonnes
Ni			40.7	**	1.95	**	42.7	tonnes
PCBs ***			0.0	*	0.00	*	0.0	kg
PCBs			3.7	**	0.58	**	4.3	kg
gamma-HCH			4		0.41		4	kg
NH4-N	91	152	355		38		636	tonnes
NO3-N	1010	1	540		148		1699	tonnes
PO4-P	18	16	13		15		62	tonnes
Total N	1681	205	3049		611		5546	tonnes
Total P	88	27	108		27		250	tonnes
S.P.M.		2214534	30510		5017		2250061	tonnes
TOC		340	23		9595		9958	tonnes
COD		1537					1537	tonnes
BOD		701					701	tonnes

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

***** the following congeners: IUPAC Nos. 28,52,101,118,153,138,180**

Table 10.5 A Main rivers. "Mean" load (Mean concentrations multiplied with mean runoff 1961-90) (Limit-values=limits).

Watercourse	Runoff data							Parameters (mean values)									
	Drainage area			Discharge													
	Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station		Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd limit	Pb limit	S.P.M.
				Normal	1993	Normal	1993											
	kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		mS/m	tons	tons	tons	tons	Tons	tons	tons	tons	tons	t.tons
Glomma, Hvaler-Singlefj.	41918	41218	40221	16.5	11.4	16.9	11.7	4.59	435.39	214.48	12826	8150	621.98	48.04	116.89	0.858	11.796	265.09
Drammensvassdr, Dr.fj. V	17034	17028	16020	17.1	16.6	18.2	17.7	3.53	48.67	12.86	3664	2241	137.74	7.35	23.05	0.275	1.377	15.15
Numedalslågen, Larvikfj.	5577	5513	5197	21.2	20.2	21.2	20.2	3.07	46.07	24.33	1485	778	99.52	21.01	69.29	0.221	2.801	23.63
Skiensvassdr, Grenlandsfj.	10772	10348	10348	25.3	22.6	25.3	22.6	2.10	20.64	5.53	2725	1899	99.08	3.72	24.52	0.330	0.661	4.29
Otra, Kr.Sandsfj.	3738	3730	3668	39.8	39.8	39.8	39.8	2.56	17.79	2.95	1091	548	42.13	1.92	24.53	0.094	1.498	5.52
Orreelva, Orresanden	105	105	54	36.7	21.6	40.7	24	19.73	8.66	2.42	171	76	3.52	0.18	0.43	0.004	0.089	1.62
Suldalsl.,Sandsfj.Boknafj.	1457	1457	1457	59	33.3	59	33.3	2.55	4.88	1.36	667	518	13.55	1.06	8.08	0.217	0.352	1.68
Orkla, Orkdalsfj.Tr.h.fj.	3053	2872	2247	21.7	23.6	21.7	23.6	6.69	8.65	2.56	515	299	13.76	20.24	62.11	0.177	0.118	3.07
Vefsna, Vefsenfj. S	4122	4113	3323	43.9	45.4	43.9	45.4	7.23	21.64	8.54	1310	495	56.94	16.00	28.19	0.285	2.164	22.83
Altaelva, Altafj.	7373	7367	6257	11.8	13.5	11.8	13.5	11.30	26.87	15.35	611	148	38.38	6.31	3.18	0.164	0.411	5.02

Watercourse	Parameters (mean values)													
			PCB (The folloving Congeners) IUPAC NOS											
	Hg limit	Gamma HCH	28 . limit	52 limit	101 limit	118 limit	138 . limit	153 . limit	180 limit	SUM : limit	TOC	Cr-T limit	Ni limit	As limit
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	t.tons	tons	tons	tons
Glomma, Hvaler-Singlefj.	62.198	13.297	0.643	0.643	0.643	0.643	0.643	0.643	0.643	4.504	83.645	18.874	27.667	3.432
Drammensvassdr, Dr.fj. V	9.183	7.530	0.275	0.275	0.275	0.275	0.275	0.275	0.275	1.928	25.711	2.663	5.693	1.469
Numedalslågen, Larvikfj.	6.966	2.211	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.774	15.849	1.990	2.175	0.700
Skiensvassdr, Grenlandsfj.	8.752	8.834	0.248	0.248	0.248	0.248	0.248	0.248	0.248	1.734	19.815	2.559	3.963	0.908
Otra, Kr.Sandsfj.	4.682	3.839	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.983	12.172	0.562	2.247	2.575
Orreelva, Orresanden	0.122	0.145	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.026	0.668	0.258	0.254	0.045
Suldalsl.,Sandsfj.Boknafj.	2.711	2.304	0.081	0.081	0.081	0.081	0.081	0.081	0.081	0.569	1.355	1.518	0.759	0.190
Orkla, Orkdalsfj.Tr.h.fj.	1.965	0.570	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.413	5.503	0.963	2.437	1.730
Vefsna, Vefsenfj. S	5.694	1.651	0.171	0.171	0.171	0.171	0.171	0.171	0.171	1.196	19.360	4.783	5.239	0.854
Altaelva, Altafj.	2.741	0.411	0.082	0.082	0.082	0.082	0.082	0.082	0.082	0.576	9.595	3.728	1.946	0.877

Table 10.5 B Main rivers. "Mean" load (Mean concentrations multiplied with mean runoff 1961-90) (Limit-values=zero).

Watercourse	Runoff data							Parameters (mean values)									
	Drainage area			Discharge													
	Outlet	Sampl. station	Disch. gaug. station	Sampling station		gauging station		Cond	Tot-P	PO4-P	Tot-N	NO3-N	NH4-N	Cu	Zn	Cd zero	Pb zero	S.P.M.
				Normal	1993	Normal	1993											
	kv.km	kv.km	kv.km	l/s kv.km		l/s kv.km		mS/m	tons	tons	tons	tons	tons	tons	tons	tons	tons	t.tons
Glomma, Hvaler-Singlefj.	41918	41218	40221	16.5	11.4	16.9	11.7	4.59	435.39	214.48	12826	8150	621.98	48.04	116.89	0.858	11.796	265.09
Drammensvassdr, Dr.fj. V	17034	17028	16020	17.1	16.6	18.2	17.7	3.53	48.67	12.86	3664	2241	137.74	7.35	23.05	0.275	1.377	15.15
Numedalslågen, Larvikfj.	5577	5513	5197	21.2	20.2	21.2	20.2	3.07	46.07	24.33	1485	778	99.52	21.01	69.29	0.221	2.801	23.63
Skiensvassdr, Grenlandsfj.	10772	10348	10348	25.3	22.6	25.3	22.6	2.10	20.64	5.53	2725	1899	99.08	3.72	24.52	0.330	0.661	4.29
Otra, Kr.Sandsfj.	3738	3730	3668	39.8	39.8	39.8	39.8	2.56	17.79	2.95	1091	548	42.13	1.92	24.53	0.094	1.498	5.52
Orreelva, Orresanden	105	105	54	36.7	21.6	40.7	24	19.73	8.66	2.42	171	76	3.52	0.18	0.43	0.004	0.089	1.62
Suldalsl.,Sandsfj.Boknafj.	1457	1457	1457	59	33.3	59	33.3	2.55	4.88	1.36	667	518	13.55	1.06	8.08	0.217	0.352	1.68
Orkla, Orkdalsfj.Tr.h.fj.	3053	2872	2247	21.7	23.6	21.7	23.6	6.69	8.65	2.56	515	299	13.76	20.24	62.11	0.177	0.118	3.07
Vefsna, Vefsenfj. S	4122	4113	3323	43.9	45.4	43.9	45.4	7.23	21.64	8.54	1310	495	56.94	16.00	28.19	0.285	2.164	22.83
Altaelva, Altafj.	7373	7367	6257	11.8	13.5	11.8	13.5	11.30	26.87	15.35	611	148	38.38	6.31	3.18	0.164	0.411	5.02

Watercourse	Parameters (mean values)													
			PCB (The following Congeners) IUPAC NOS											
	Hg zero	Gamma HCH	28 zero	52 zero	101 zero	118 zero	138 zero	153 zero	180 zero	SUM : zero	TOC	Cr-T zero	Ni zero	As zero
	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	t.tons	tons	tons	tons
Glomma, Hvaler-Singlefj.	62.198	13.297	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	83.645	18.874	27.667	3.432
Drammensvassdr, Dr.fj. V	0.000	7.530	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	25.711	2.663	5.693	1.469
Numedalslågen, Larvikfj.	6.966	2.211	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.849	1.990	2.175	0.700
Skiensvassdr, Grenlandsfj.	8.752	8.834	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	19.815	2.559	3.963	0.908
Otra, Kr.Sandsfj.	0.000	3.839	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.172	0.562	2.247	2.575
Orreelva, Orresanden	0.000	0.145	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.668	0.258	0.254	0.045
Suldalsl.,Sandsfj.Boknafj.	0.000	2.304	0.000	0.000	0.000	0.000	0.000	0.081	0.000	0.081	1.355	1.518	0.759	0.190
Orkla, Orkdalsfj.Tr.h.fj.	0.000	0.570	0.000	0.000	0.000	0.000	0.000	0.059	0.000	0.059	5.503	0.963	2.437	1.730
Vefsna, Vefsenfj. S	0.000	1.651	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	19.360	4.783	5.239	0.854
Altaelva, Altafj.	2.741	0.411	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.595	3.728	1.946	0.877

Table 10.6 The Skagerrak Region. "Mean" inputs from tributary rivers in The Sub-areas (1 - 5) . (Mean concentrations 1993 multiplied with mean runoff, 1931-60)

The Skagerrak Region with sub-areas: (1A) Glomma, (1B) Inner Oslofj., (2) Drammenselva, (3) Numedalslågen, (4) Skienselva, (5) Otra

Total quantity of substance discharged per year:								Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Sub-areas :	1A	1B	2	3	4	5			
Substance:									
Cd *	0.05	0.22	0.00	0.02	0.01	0.67	tonnes	YES	%
Cd **	0.05	0.22	0.00	0.02	0.01	0.67	tonnes		%
Hg *	1.17	1.18	0.23	0.41	2.02	17.06	kg	YES	%
Hg **	1.17	1.29	0.23	0.74	2.02	19.27	kg		%
Cu	1.2	1.1	0.1	0.9	0.3	3.9	tonnes	YES	%
Zn	2.8	4.8	1.2	12.6	8.1	92.7	tonnes	YES	%
Pb *	1.22	0.50	0.05	0.32	0.18	5.08	tonnes	YES	%
Pb **	1.22	0.50	0.05	0.32	0.18	5.08	tonnes		%
Arsenic *	0.33	0.13	0.03	0.16	0.31	2.38	tonnes	YES	%
Arsenic **	0.33	0.13	0.03	0.16	0.31	2.38	tonnes		%
Cr-T *	1.97	0.59	0.19	0.67	1.13	7.18	tonnes	YES	%
Cr-T **	1.97	0.59	0.19	0.67	1.13	7.18	tonnes		%
Ni *	1.05	0.55	0.18	0.65	0.29	1.68	tonnes	YES	%
Ni **	1.05	0.55	0.18	0.65	0.29	1.68	tonnes		%
PCBs *	0.00	0.11	0.00	0.00	0.00	0.00	kg	NO	%
PCBs **	0.23	0.16	0.03	0.13	0.21	2.08	kg		%
gamma-HCH	0.74	0.25	0.04	0.22	1.01	8.80	kg	YES	%
NH4-N	58.41	29.71	4.21	29.29	24.25	288.8	tonnes	YES	%
NO3-N	907	401	158	631	212	1809	tonnes	YES	%
PO4-P	5.7	4.5	6.0	5.1	0.5	5.4	tonnes	YES	%
Total N	1235	622	199	1202	409	3413	tonnes	YES	%
Total P	21	18	9	13	5	46	tonnes	YES	%
S.P.M.	3512	3465	1512	1905	1182	12854	tonnes	YES	%
TOC	7	2	1	3	3	25	tonnes	YES	%

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 10.7 The remaining North Sea. "Mean" inputs from tributary rivers in The Subareas (6-7). (Mean concentrations 1993 multiplied with mean runoff, 1931-60)

The remaining North Sea Region with sub-areas: (6) Orreelva, (7) Suldalslågen

Total quantity of substance discharged per year:				Were 70 % of measurements above the detection limit ?		Precision of the estimate of the load
Sub-areas :	6	7				
Substance:						
Cd *	0.38	0.73	tonnes	YES	_____	%
Cd **	0.38	0.79	tonnes		_____	%
Hg *	5.39	22.63	kg	YES	_____	%
Hg **	16.04	38.13	kg		_____	%
Cu	4.1	8.9	tonnes	YES	_____	%
Zn	71.9	72.4	tonnes	YES	_____	%
Pb *	7.49	2.74	tonnes	YES	_____	%
Pb **	7.49	2.80	tonnes		_____	%
Arsenic *	3.85	1.68	tonnes	YES	_____	%
Arsenic **	3.85	1.71	tonnes		_____	%
Cr-T *	17.00	20.18	tonnes	YES	_____	%
Cr-T **	17.00	20.18	tonnes		_____	%
Ni *	3.98	1.85	tonnes	YES	_____	%
Ni **	3.98	1.88	tonnes		_____	%
PCBs *	0.00	0.00	kg	NO	_____	%
PCBs **	3.09	6.02	kg		_____	%
gamma-HCH	8.56	7.40	kg	YES	_____	%
NH4-N	321.42	199.96	tonnes	YES	_____	%
NO3-N	3617	3678	tonnes	YES	_____	%
PO4-P	23.0	32.9	tonnes	YES	_____	%
Total N	5337	5703	tonnes	YES	_____	%
Total P	80	106	tonnes	YES	_____	%
S.P.M.	17313	21858	tonnes	YES	_____	%
TOC	30	25	tonnes	YES	_____	%

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**

Table 10.8 The Norwegian Sea. "Mean" inputs from tributary rivers in The Subareas (8-9). (Mean concentrations 1993 multiplied with mean runoff, 1931-60)

The Norwegian Sea Region with sub-areas: (8) Orkla, (9) Vefsna

Total quantity of substance discharged per year:				Were 70 % of measurements above the detection limit ?		Precision of the estimate of the load
Sub-areas :	8	9				
Substance:						
Cd *	1.03	0.85	tonnes	YES	_____	%
Cd **	1.06	0.85	tonnes		_____	%
Hg *	58.95	8.22	kg	YES	_____	%
Hg **	68.94	29.58	kg		_____	%
Cu	37.1	36.7	tonnes	YES	_____	%
Zn	104.7	72.1	tonnes	YES	_____	%
Pb *	4.45	4.57	tonnes	YES	_____	%
Pb **	4.49	4.57	tonnes		_____	%
Arsenic *	0.60	0.00	tonnes	YES	_____	%
Arsenic **	0.61	0.00	tonnes		_____	%
Cr-T *	42.41	43.38	tonnes	YES	_____	%
Cr-T **	42.41	43.38	tonnes		_____	%
Ni *	21.96	19.56	tonnes	YES	_____	%
Ni **	21.98	19.56	tonnes		_____	%
PCBs *	1.08	0.00	kg	NO	_____	%
PCBs **	8.47	6.09	kg		_____	%
gamma-HCH	13.80	9.00	kg	YES	_____	%
NH4-N	278.91	191.44	tonnes	YES	_____	%
NO3-N	3565	825	tonnes	YES	_____	%
PO4-P	54.1	49.9	tonnes	YES	_____	%
Total N	8366	2648	tonnes	YES	_____	%
Total P	220	129	tonnes	YES	_____	%
S.P.M.	89897	108015	tonnes	YES	_____	%
TOC	23	6	tonnes	YES	_____	%

Measurements below detection limits are treated in two ways :

*) Detection limit = Zero

**) Detection limit = Limit

Table 10.9 The Barents Sea. "Mean" inputs from tributary rivers in The Sub-area (10). (Mean concentrations 1993 multiplied with mean runoff, 1931-60)

The Barents Sea Region with sub-area: (10) Alta

Total quantity of substance discharged per year:			Were 70 % of measurements above the detection limit ?	Precision of the estimate of the load
Sub-area :	10			
Substance:				
Cd *	0.37	tonnes	YES	%
Cd **	0.38	tonnes		%
Hg *	27.51	kg	YES	%
Hg **	32.62	kg		%
Cu	17.0	tonnes	YES	%
Zn	16.2	tonnes	YES	%
Pb *	0.86	tonnes	YES	%
Pb **	0.87	tonnes		%
Arsenic *	0.00	tonnes	YES	%
Arsenic **	0.00	tonnes		%
Cr-T *	16.49	tonnes	YES	%
Cr-T **	16.49	tonnes		%
Ni *	40.68	tonnes	YES	%
Ni **	40.68	tonnes		%
PCBs *	0.00	kg	NO	%
PCBs **	3.69	kg		%
gamma-HCH	3.51	kg	YES	%
NH4-N	355.07	tonnes		%
NO3-N	540	tonnes	YES	%
PO4-P	12.7	tonnes	YES	%
Total N	3049	tonnes	YES	%
Total P	108	tonnes	YES	%
S.P.M.	30510	tonnes	YES	%
TOC	23	tonnes	YES	%

Measurements below detection limits are treated in two ways :

***) Detection limit = Zero**

****) Detection limit = Limit**