

European Topic Centre on Inland Waters

Annual topic update 2000

Authors:
A.-F. Boschet, S. C. Nixon and T. J. Lack

This report was prepared under the supervision of N. Thyssen,
Project Manager Inland Waters, European Environment Agency



Legal notice

The contents of this report do not necessarily reflect the official opinion of the European Commission or other European Community institutions. Neither the European Environment Agency nor any person or company acting on behalf of the Agency is responsible for the use that may be made of the information contained in this report.

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server (<http://europa.eu.int>).

© EEA, Copenhagen, 2001

Reproduction is authorised provided the source is acknowledged.

European Environment Agency
Kongens Nytorv 6
DK-1050 Copenhagen K
Denmark
Tel. (45) 33 36 71 00
Fax (45) 33 36 71 99
E-mail: eea@eea.eu.int
Internet: <http://www.eea.eu.int>

Contents

1.	Background and management	4
2.	Progress during 2000	8
2.1.	Products	8
2.2.	Waterbase and water archive	9
2.3.	Indicators	10
2.4.	Contribution to the EEA report on biodiversity in Europe	11
2.5.	The Silkeborg workshop.....	11
3.	Major achievements 1994–2000	13
3.1.	Sustainable use of water: the contribution of the ETC/IW	13
3.1.1.	Water availability	13
3.1.2.	Water use.....	14
3.1.3.	Water quality.....	14
3.1.4.	Human pressures on water	15
3.1.5.	Water management	15
3.1.6.	Water monitoring.....	16
3.2.	Eurowaternet and Waterbase development, 1994–2000	16
3.2.1.	Eurowaternet/Rivers	17
3.2.2.	Eurowaternet/Lakes	19
3.2.3.	Eurowaternet/Groundwater.....	21
3.2.4.	Eurowaternet/Emissions (pressures)	23
3.2.5.	Eurowaternet/Quantity	24
3.2.6.	Waterbase.....	25
3.3.	Main policy support activities	26
4.	Products/outputs produced by the ETC/IW (1994–2000)	29
4.1.	Published reports (1994–2000).....	29
4.2.	Reports to be published by the EEA (or others)	30

1. Background and management

The European Environment Agency

The European Environment Agency (EEA), based in Copenhagen, was established in 1990 by Council Regulation 1210/90 to provide information on framing and implementing sound environmental policies. The regulation laid down a number of tasks for the Agency and prime among these is the establishment and coordination of a network for collecting, processing and analysing environmental data. This network is the European environmental information and observation network (Eionet) and the Agency has the responsibility for coordinating and developing it.

The mission of the Agency is described as follows: ‘The EEA aims to support sustainable development and help achieve significant and measurable improvement in Europe’s environment through the provision of timely, targeted, relevant and reliable information to policy-making agents and the public.’ European topic centres have been appointed by the Agency to act as centres of expertise and to execute particular tasks identified in its multiannual work programme.

The European Topic Centre on Inland Waters

The European Topic Centre on Inland Waters (ETC/IW) was appointed in December 1994 and is led by the Water Research Centre (WRC), under contract to the EEA. The ETC/IW consists of a consortium of several European organisations, each of which has a representative on the ETC’s Management Committee. This committee agrees the allocation of tasks and budget and its partners are accountable to the ETC Leader for the satisfactory execution of the work plan. The Management Committee is chaired by the ETC Leader (Tim Lack of WRC), and WRC also provides the services of a technical manager (Steve Nixon) and a data manager (Stephen D’Alton). The other organisations represented on the Management Committee and their nominated representatives are:

- Austrian Working Group on Water (AWW, Austria): Wilhelm Vogel;
- Centro de Estudios y Experimentación de Obras Publicas (Cedex, Spain): Teodoro Estrela;
- Flemish Environment Agency (VMM — Belgium, Flanders): Jan Voet;
- Instituto da Agua (INAG, Portugal): no representative since 1998;
- International Office for Water (IOW, France): Dominique Preux;
- National Environmental Research Institute (NERI, Denmark): Torben Moth Iversen;
- Norwegian Institute for Water Research (NIVA, Norway): Merete Ulstein.

There are two supporting organisations, which also contribute to the Topic Centre’s work:

- Danish and Greenland Geological Survey (GEUS, Denmark): Peter Gravesen;
- Centre for Ecology and Hydrology (CEH — formerly IoH — UK): Dick Bradford.

ETC/IW core team

An international team of specialists coordinating the Topic Centre's work plan and acting as the interface between the Agency and the Topic Centre is based at WRc Medmenham. This Core Team includes:

Tim Lack (WRc) Leader	André Boschet (IOW) Deputy Leader	Virginie De Paepe of French Ministry of Agriculture from December 1999 until June 2000, Céline Kergrohen from Engées France in August 2000, Elise Garcia from the Ecole Centrale, and Nolwenn Corvaisier from Engref France in September October 2000, and students (stagiaires).
Steve Nixon (WRc) Technical Manager	Marisol Garcia (WRc) Data Manager, replaced by Stephen D'Alton from 31 July 2000	Concepción Lallana De Valle (Cedex) National Expert on Water Resources Management

Other member countries are invited to send representatives to the Core Team to improve working relationships and develop a deeper understanding of the operation of the Topic Centre and its work plan.

Phare topic link on inland waters (PTL/IW)

The extension of Eionet to central and east European countries has been made possible through the funding of the European Community's Phare programme. For inland waters, a Phare topic link (PTL/IW) was appointed in 1997. This consists of a PTL Leader, János Fehér (Vituki Consult Rt., Hungary) with three other organisations: the Institute of Meteorology and Water Management (Poland), the Water Management Institute (Slovenia) and the Water Research Institute (Czech Republic). The PTL/IW leader and ETC/IW leader jointly developed the PTL/IW work plan to coordinate the technical tasks to be undertaken. In this way, the PTL/IW and ETC/IW work together as part of an extended ETC on Inland Waters.

Further information on ETC/IW and PTL/IW, the EEA and other topic centres is provided on the following web sites:

ETC/IW: <http://etc-iw.Eionet.eu.int/>
EEA: <http://www.eea.eu.int>

List of principal contact points for inland waters

EEA member countries

Country	Name	Institutions	Tel/fax/e-mail
Austria	Johannes Mayer	Federal Environment Agency	(43-1) 313 04 32 40/313 04 54 00 mayer@uba.ubavie.gv.at
Belgium	Jan Voet, Anne Teller Alain Derouane	Interregional Cell for the Environment	(32-2) 649 81 91/644 23 91 nfp@irceline.be
Denmark	Torben Moth Iversen	NERI	(45) 89 20 14 00/89 20 14 14 fvap@dmu.dk
Finland	Tapani Säynätkari	Finnish Environment Agency	(358-9) 40 30 02 38/40 30 02 91 tapani.saynatkari@vyh.fi
France	Jean-Louis Weber	IFEN	(33) 238 79 78 78/238 79 78 70 jean-louis.weber@ifen.fr
Germany	Jürgen Pankrath	UBA	(49-30) 89 03 27 11/89 03 29 20 barbara.clark@uba.de
Greece	Mata Aravantinou	Ministry for the Environment	(30-1) 864 3737/864 37 37 mata@nfp-gr.Eionet.eu.int
Iceland	Ólafur Pétursson	Environment and Food Agency of Iceland	(354) 568 88 48/568 18 96 olafurp@hollver.is
Ireland	Larry Stapleton	EPA	(353) 534 71 20/534 71 19 l.stapleton@epa.ic / nfp@epa.ic
Italy	Claudio Maricchiolo	ANPA Roma	(39) 650 07 21 77/650 07 22 21 maricchiolo@anpa.it
Liechtenstein	Michael Fasel	National Office for Forests, Nature and Landscape	(423) 236 64 01/236 64 11 michael.fasel@awnl.llv.li
Luxembourg	Jean-Paul Feltgen	Ministère de l'Environnement	(352) 478 68 13/40 04 10 jean-paul.feltgen@life.lu
Netherlands	Adriaan Minderhoud	RIVM	(31-30) 274 20 35/274 44 05 ad.minderhoud@rivm.nl
Norway	Kari E. Fagernæs	Norwegian Pollution Control Authority	(47) 22 57 34 00, fax (47) 22 67 67 06 kari-elisabeth.fagernas@sft.no
Portugal	Maria Leonor Gomes	Direcao Geral do Ambiente (SINAIA)	(351) 214 72 82 00/214 71 90 74 leonor.gomes@dga.min-amb.pt
Spain	Juan Martinez Sánchez	Ministerio de Medio Ambiente	(34) 15 97 58 12/15 97 58 57 juan.martinez@sgca.mma.es
Sweden	Catarina Johansson	Swedish EPA	(46-8) 698 12 45/698 15 84 catarina.johansson@environ.se
United Kingdom	Paul Swallow	Department of the Environment, Transport and the Regions	(44-20) 72 76 89 47/72 76 87 48 paul.swallow@nfp-gb.Eionet.eu.int

Phare countries

Country	Name	Institutions	Tel./fax/e-mail
Albania	Violeta Zuna	National Environment Agency	(355-42) 649 03/652 29 cep@cep.tirana.al
Bosnia and Herzegovina	Mehmed Cero	Federal Ministry of Physical Planning and Environment	(387-71) 66 35 48/47 31 24 cerosara@bih.net.ba
Bulgaria	Svetlana Zhekov	Ministry of the Environment and Water	(359-2) 987 83 42/980 33 17 phare@moew.govrn.bg
Czech Republic	Josef Sejak	The Czech Environmental Institute	Tel. (420-2) 67 12 20 32 Fax (420-2) 71 73 77 21 E-mail: josef.sejak@ceu.cz
Estonia	Leo Saare	Estonian Environment Information Centre	(372-6) 56 41 51/56 40 71 saare@ic.envir.ee
F.Y.R. of Macedonia	Svetlana Gjorgjeva	Ministry of the Environment	(389-91) 36 69 30 ext. 111/ (389-91) 36 69 31 gjorgeva@unet.com.mk
Hungary	Pal Bozo	Ministry of the Environment	(36-1) 457 33 69/201 43 61 pbozo@nfp-hu.Eionet.eu.int
Latvia	Ilze Kirstuka	Latvian Environmental Data Centre	(371-2) 76 22 82/76 44 39 ilze.Kirstuka@vdc.lv
Lithuania	Liutauras Stoskus	Ministry of the Environment	(370-2) 72 25 54/72 32 02 Liutauras.Stoskus@nt.gamta.lt
Poland	Lucyna Dygas Ciolkowska	State Inspectorate for Environmental Protection	(48-22) 25 48 59/25 41 29 lciolkow@pios.gov.pl
Romania	Radu Paunescu	Ministry of Water, Forests and Environmental Protection	(40-1) 410 63 94/410 63 94 rapaunescu@lycosmail.com
Slovak Republic	Vladimir Benko	7/ Ministry of the Environment	(421-88) 413 21 60/413 21 benko@sazp.sk
Slovenia	Anita Velkavrh	Ministry of the Environment and Spatial Planning	(386-61) 178 45 34/178 40 51 anita.velkavrh@gov.si

Since this is the last annual topic update of the European Topic Centre on Inland Waters, the document is presented in a slightly different way from previous years. Part 2 briefly describes the progress during year 2000 and the main products obtained. Part 3 is a presentation of the major achievements of the Topic Centre during its two contractual periods ranging from 1994 to 2000.

2. Progress during 2000

This section presents some highlights of the progress in ETC/IW tasks during year 2000.

2.1. Products

The main products arising from the year 2000 ETC/IW work plan are presented in Table 1. The products were divided into first and second priorities. In addition, one of the tasks for 2000 was the completion of a certain number of reports from previous years, which were delayed due to changed priorities for work or arose from additional subventions.

Concerning the 'Assessment of statutory reporting on water', the objective of this report is to review and assess the usefulness to the EEA of water questionnaires returned by Member States to the European Commission under the standardised reporting directive (91/692/EEC). The assessment will provide an important input to the comprehensive review of the entire monitoring, reporting and evaluation cycle as a key action arising from the sixth environment action programme.

The main objective of the study on 'Dissemination of research results to support policy development in the field of hazards from new technologies' is to collate, appraise and summarise the latest research and information on the monitoring of, effects of, and exposure to hazardous substances in water in EU Member States. It also aims to identify the gaps in existing knowledge and to disseminate the information to the relevant policy communities. Lists of potentially hazardous substances are very long, and therefore some focus has to be given to the selection. The water framework directive (2000/60/EC), proposes a list of priority substances, some of which have been reported to have endocrine disrupting effects. The list was finalised by the Commission following a very detailed assessment of hazardous substances known as the Commps procedure.

Table 1: Outputs 2000

First priority products
Annual topic update report 2000 Contribution to 'Environmental signals' 2001 report Contribution to Europe's biodiversity report Development of the core set of water indicators
Second priority products
Progress report on the implementation of Eurowaternet and Waterbase Progress report on the gathering of data on emissions to water and on the standardisation of water resource data and indicators (technical report)
Other products
Report on the joint Eionet/WFD workshop, Silkeborg, September 2000 Reporting obligations database report Pilot study on the development of Eurowaternet/Quantity Consolidation work — water archive inventories and historical data Assessment of feasibility of incorporation of Commps database into Waterbase, and of making it more publicly accessible Comparative analysis of river quality classification schemes in Europe Towards an index of quality of the national data in Waterbase Sustainable water use in Europe: Part 2 Demand management Sustainable water use in Europe: Part 3 Extreme hydrological events Sustainable use of Europe's water? Legislative requirements for information on emissions Assessment of statutory reporting on water Dissemination of research results to support policy development in the field of hazards from new technologies

2.2. Waterbase and water archive

Waterbase is a series of working databases operating on different software and hardware platforms, maintained and updated by partners of the ETC/IW which, using Eurowaternet, contains data from countries that are needed to make assessments and reports for the EEA as detailed in the work plan. Under the Teresa project, a data exchange tool is currently under development which will transfer data in XML-format from the working Waterbase to a MySQL database, which will be the reference Waterbase available to all users via the Internet. A prototype of the reference database has been developed and tested and this will be further developed by the new ETC on Water.

Waterbase/Rivers currently has data on 3 000 stations covering 15 EEA countries and 12 Phare countries across Europe. There are over 282 000 chemical records relating to these stations.

All the data that were received by the ETC/IW have been verified and uploaded into Waterbase/Rivers although a final validation by member countries is still required.

Pressure data records are not as comprehensive as those for state but there has been an increase in the pressure data from the ETC/IW during the year 2000.

Waterbase/Lakes contains data on 1 178 lakes or reservoirs covering 13 EEA countries and eight Phare countries. Information on the physical characteristics and the chemical state of the lakes is generally good but, for rivers, pressure data are very sparse.

Waterbase/Groundwater currently contains information from 17 countries and more than 500 groundwater bodies on their physical characteristics (e.g. size,

geology, hydro-geology, hydrological information, and pressure data such as land use), and water quality (e.g. nitrate, nitrite, ammonium and dissolved oxygen).

The water archive is a series of static databases which have been produced by the ETC/IW during its six years of operation and are being held by the Core Team as reference material underpinning the various reports and outputs. Examples of such databases are:

- inventory of surface water-quality monitoring networks;
- inventory of surface water-quantity monitoring networks;
- inventory of groundwater-quality and quantity monitoring networks;
- inventory of lakes and reservoirs (Eldred);
- inventory of international monitoring databases;
- inventory of international monitoring requirements.

2.3. Indicators

The EEA produces annual reports on key environmental issues based on policy-relevant indicators. It is doing so through its regular 'Environmental signals' reports which present a selection of indicators on a broad range of environmental issues, and through the production of more detailed, indicator-based reports on specific environmental issues (so-called assessment, issue or topic reports). In addition to these initiatives, the EEA also supports the Commission services and Member States in the development of sectoral reporting mechanisms for transport (TERM), energy, agriculture and industry. The development of these mechanisms is being overseen by a working group under the auspices of the Environmental Policy Review Group (EPRG) chaired by the Environment DG and on which all environment ministries of Member States are represented. The EPRG is also working towards a set of 'environmental headline indicators' for Europe and has asked the EEA and Eurostat to develop them. In support of this, the EEA and the ETC/IW have developed a 'Core set of indicators' for inland waters.

The environmental headline indicators cover 11 major issues, each represented by an indicator, and the first set will be published in early 2001. For water, there is a water-quality indicator based on phosphorus and nitrogen in rivers, and for water quantity, an indicator based on total freshwater abstractions.

As shown in Table 2, the EEA's 'Environmental signals' 2000 report published in May 2000 had indicators covering two water issues: water stress and eutrophication.

Table 2: Environmental signals 2000 indicators

Water stress	Eutrophication
Trends in public water supply and agricultural water use	Nitrogen and phosphorus in EU rivers
Water exploitation index	Nitrate concentrations in groundwater
Sectoral water use by country	Phosphorus in lakes

The analysis of water issues in the 2000 report was mainly based upon data and information gathered by the ETC/IW from a variety of sources for the production of several thematic water reports. The 2001 report will be based upon data held in Waterbase and gathered from national monitoring systems through the Eurowaternet process. Thus, it will be possible to make a much broader

assessment of the environmental conditions of different size classes of water bodies (e.g. small, medium, large lakes and rivers). In addition, using the proxy-pressure information (derived from Corine land cover) for each river station, it will be possible to identify different sized rivers in different types of catchment, e.g. agricultural and urban. Table 3 gives the list of the selected indicators for the year 2001 report.

Table 3: Indicators selected for 'Environmental signals' 2001

Indicator	Source
N and P in large rivers (headline indicator)	Waterbase
N and P in rivers by size class/type	Waterbase
Dissolved oxygen in rivers by size class/type	Waterbase
BOD/COD in rivers by size class/type	Waterbase
Wastewater treatment per country	Eurostat

The core set of water indicators will cover the perceived main issues and problems associated with Europe's waters. The indicators for the 'Environmental signals' reports will be a selected sub-set of the core set. The core set of indicators is anchored in the DPSIR assessment framework and covers water stress (in surface water and groundwater), organic pollution and eutrophication of rivers and lakes, groundwater quality, hazardous substances in all water types, and ecological (biological) quality.

The data sets for the indicators will be collected using Eurowaternet, and the data and information stored in Waterbase. The aim is to publish a first comprehensive indicator-based report on Europe's water in 2002. The report will be pan-European, and will feed information into the 'Kiev report', which will be produced for the Kiev Environment Ministers conference in early 2003.

2.4. Contribution to the EEA report on biodiversity in Europe

This report supports the European Community's reporting obligations to the UN Convention on Biological Diversity. During the year 2000, the ETC/IW delivered its input and activity was directed towards defining the data requirements and data gathering in connection with the activities of the EEA. The ETC/IW provided information on wetlands for the chapters on the 11 bio-geographic regions of Europe, and for the chapters on acidification and environmental effects of physical impacts on inland water bodies. Data and reports were delivered to the EEA, which plans to publish a comprehensive account of European biodiversity in 2001.

2.5. The Silkeborg workshop

The joint workshop of the European Environment Agency's Eionet group and the European Commission (Environment DG) National Expert Group on the water framework directive was held in Silkeborg, on 5 and 6 September 2000. The aim of the workshop was to present and agree proposals for the streamlining of the reporting and use of information on water at the European level. These proposals were discussed in terms of the needs and obligations of the European

Environment Agency, and the requirements of the European Commission in terms of the water framework directive.

The proposal is for Member States to use the European Environment Agency's monitoring and information network for inland waters (Eurowaternet, EWN) to submit a significant part of the information required by the water framework directive. The workshop recommended the development of a detailed implementation plan to achieve the desired streamlining of reporting and information needs.

Approximately 60 participants from 27 European countries attended the workshop and the main recommendations which were agreed are as follows:

- **support** proposal by France for a technical workshop in 2001 in support of 'bridging the gap' activities;
- **support** focus of new ETC on all water issues, on Eurowaternet and indicators, and the water framework directive as the key policy framework for assessment;
- **support** cooperation between EEA/ETC and water framework directive Article 21 Committee in the development of reporting needs and process;
- **ask** the EEA/ETC to focus Eurowaternet developments in 2001–03 on needs of current core indicators set (mainly chemical and quantity);
- **in parallel, ask** EEA/ETC to develop Eurowaternet/Waterbase and indicators (including biological) to incorporate transitional, coastal waters and marine waters consistent with water framework directive needs;
- **ask** the EEA/ETC and the Environment DG to prioritise development of measurement methods for ecology/hydromorphology and other areas of uncertainty for Eurowaternet/water framework directive;
- **invite** the Agency and Commission to continue analysis of the Reporting Obligations Database (ROD) to capture the extent and possible duplication of effort in current reporting systems for water;
- **invite** the Agency to continue linking the ROD analysis to the information needs for indicators, Eurowaternet and the water framework directive by identifying redundancies in current reporting and gaps to be addressed in the future;
- **invite** the Commission to consider in its review of reporting the potential for minimising overlap of timetables for current reporting and water framework directive reporting, including the substitution of old, redundant determinants with new water framework directive ones.

3. Major achievements 1994–2000

Since this is the last annual topic update of the ETC/IW, this section will summarise the main progress during the six years of work.

3.1. Sustainable use of water: the contribution of the ETC/IW

During the period 1994–2000, the ETC/IW has made a significant contribution to the gathering of information supporting the sustainable use of water. This is summarised under the following six headings.

3.1.1. *Water availability*

The amount of water available to any country depends on the rainfall falling on it, and on the net result of flows from and to its neighbours (e.g. in rivers and aquifers).

Availability varies:

- seasonally, from year to year, and over longer periods in response to climatic variations;
- between countries, or between the regions of a single country, some having plentiful supplies whilst others often suffer shortages or droughts.

On an average year, up to 3 200 m³ of water is available for every EU citizen, but only 660 m³ is abstracted. Annual average run-off from rain varies from more than 3 000 mm in western Norway to less than 25 mm in southern and central Spain, and is about 100 mm over large areas of eastern Europe. Although only about one fifth of the available water is used, there are resource problems because of this uneven distribution. Moreover, this assessment does not take account of the water needed to sustain aquatic life, which reduces what is actually available to man.

Several publications prepared by the ETC/IW have helped to illustrate the differences in water availability throughout Europe and the problems related to reduced water availability. The most important are:

- ‘Human interventions in the hydrological cycle’ (Topic report 13/96);
- ‘Water resources problems in southern Europe’, (Topic report 15/96);
- ‘Groundwater quality and quantity in Europe’, (Environmental assessment report 3/99);
- ‘Sustainable water use in Europe: Part 3: Extreme hydrological events’ (Environmental issue report 20).

These reports highlighted some key issues and identified aspects that require further work before the scale of the problems can be fully quantified:

- Availability of water for human consumption, and for other uses, is often limited by poor quality.
- Typical water resource issues in water scarcity areas include: water surface exploitation; reservoir and lake eutrophication; aquifer exploitation; minimum and ecological flow; wetlands and seawater intrusion into coastal aquifers.

- The significance of droughts, desertification and floods.

3.1.2. *Water use*

Fortunately, in most European countries, the amount of water available is far greater than the volume actually used. With a total abstraction of around 240 km³/year (in 1995), the EU is using, on average, only 21 % of its renewable resources. The highest rates of abstraction are registered in Belgium, Germany, Italy, Luxembourg and Spain, with abstraction rates of above 30 %.

Most of the water abstracted is not consumed, but returned to the water cycle to become available again, after treatment or natural purification, for further use. However, it may be reintroduced at different points in the catchment from where it was abstracted. Thus, although the amounts consumed in a particular catchment may be relatively small, there may be significant impacts at the points of abstraction (for example, dried-up rivers).

Once abstracted, water is used for a number of purposes. The proportion used for different purposes varies between European countries. Public water supply is the major use in many west European and Nordic countries, but has a lower share in Mediterranean countries, where irrigation dominates.

Most European countries rely more on surface water than groundwater. However, in several countries, including Austria, Belgium and Denmark, groundwater is the main source for public water supply, because of its ready availability, and the relatively low cost of treatment and supply due to its generally high quality.

3.1.3. *Water quality*

Several reports have dealt with water quality issues:

- ‘Water quality of large rivers’ (Topic report 4/96);
- ‘Lakes and reservoirs in Europe’ (Topic report 1/99);
- ‘Groundwater quality and quantity in Europe’ (Environmental assessment report 3/99);
- ‘Nutrients in European ecosystems’ (Environmental assessment report 4/99).

These reports constitute a significant foundation and input to the EEA’s major reports such as: ‘Europe’s environment: the second assessment and state of Europe’s environment at the turn of the century’.

Any assessment of the availability, and hence sustainability, of water use must consider not only how much is available, but also how good it is. Poor quality will reduce water availability. ETC/IW products have contributed to enlightening EU citizens on the water quality issues they should be concerned about:

- **Eutrophication:** A long-term problem despite measures to reduce nutrient pollution. Phosphorus levels in rivers have fallen significantly over the last 15 years, but nitrate levels have remained high — and in many groundwater supplies, nitrate exceed the limits set in the drinking water directive. Phosphorus concentrations in severely affected lakes have fallen significantly, but nutrient concentrations in coastal waters show little overall improvement.
- **Organic pollution:** Despite a general reduction and resulting improvement in oxygen conditions, many European rivers remain in a poor state. There is

little evidence of an improving trend in smaller rivers, which are often given low priority in terms of monitoring and improvement measures.

- **Acidification:** Whilst acidification remains a problem in many areas, there have been substantial increases in the alkalinity of surface waters in northern and eastern Europe, and consequent improvements in their ecology, as a result of actions taken to control emission sources.
- **Lakes:** Although the quality of lakes in general appears to be gradually improving, the quality of many lakes in large parts of Europe remains poor.
- **Groundwater:** Nitrate and pesticide contamination of groundwater is of significance in many European countries, although data on pesticides is often very limited. Contamination by other substances (e.g. hydrocarbons, chlorinated hydrocarbons, and heavy metals) — typically from mining, industrial and military operations — is significant in many countries, and particularly severe in eastern Europe.

3.1.4. Human pressures on water

Human activities which have a massive influence on the hydrological cycle are:

- abstracting and consuming water;
- altering the environment;
- causing pollution.

Work in this area has mainly been focused on establishing common tools for the development of European inventories of point and diffuse emissions.

Common tools for emissions and waste (Technical report 8/98) are an example of the contribution of the ETC/IW to the promotion of an European inventory of emissions, although this task is far from being completed.

Human interventions can also have profound effects on water resources, water quality and aquatic and riparian ecology. There is a need to quantify their extent, and to quantify the nature and significance of the effects they have. Human interventions in the hydrological cycle (Topic report 13/96) provide a way to quantify and compare human interventions across all EEA member countries.

3.1.5. Water management

A wide range of human activities can adversely affect the condition of the aquatic environment. Disturbances can result from a human activity in a seemingly unrelated area often far away from the impact site, and can be delayed in time. The great majority of issues involving European water availability and water quality are therefore most prominent in areas with high population densities, concentrated industrial activity and/or intensive agriculture. Water use by households and industry has decreased in many EEA member countries. However, water use for agriculture has increased, especially in southern Europe where it is a major contributor to water stress.

The series of reports on Sustainable water use in Europe (Part 1: Sectoral use of water, Part 2: Demand management, Part 3: Extreme hydrological events) have illustrated that European water-management practices vary widely, and that there is large a range of regional and decentralised policies. The water framework directive will introduce catchment level management to harmonise policies throughout Europe. The ETC/IW input has been in the description of the

different types of management throughout Europe. Water is a daily touchstone in the life of every citizen, sustaining health, economic development and ecosystems, but it must be used and managed in a sustainable way. ETC/IW products have contributed to the dissemination of this message.

3.1.6. Water monitoring

Reliable high-quality information about quantity and quality of surface waters is essential for water management and implementation of optimal measures to improve environmental quality. In order to help the streamlining of European water monitoring and reporting, the ETC/IW has prepared seven reports:

- ‘Requirements for water monitoring’ (Topic report 1/96);
- ‘Surface water-quality monitoring’ (Topic report 2/96);
- ‘Surface water-quantity monitoring’ (Topic report 3/96);
- ‘European freshwater monitoring network design’ (Topic report 10/96);
- ‘European freshwater monitoring network design summary’ (Topic report 11/96),
- ‘Groundwater monitoring in Europe’ (Topic report 14/96);
- ‘International water databases’ (Topic report 16/96).

There is a continuing need for better knowledge and understanding regarding:

- impacts of existing key issues and pollutants, and of emerging ones;
- impacts of new water-management approaches on the regional development;
- cleaning and restoring aquatic ecosystems;
- reducing water pollution and consumption by all sectors.

In many European countries, monitoring programmes are still under development, and in many others, available information often makes it difficult to assess and predict trends. Also, data aggregated at country level may not fully reflect the actual position and the level of risk to water. Given the importance of sound data and information, member countries need to improve the scope, comparability, and quality of reporting and information, and have to adapt national monitoring systems to allow judgment of progress against policy targets. Countries also have to harmonise statistical guidelines to calculate trends and to ensure the comparability and reliability of indicators, and to ensure access to reliable environmental information for all citizens. The EEA has concentrated its activities on two main items:

1. The EEA has developed Eurowaternet — ‘the process by which the EEA obtains the information on water resources (quality and quantity) it needs to answer questions raised by its customers’ (see Section 3.2).
2. The EEA is developing key indicators to provide a tool to monitor and assess water policies and to improve policy effectiveness in promoting sustainability (see Section 2.3).

3.2. Eurowaternet and Waterbase development, 1994–2000

Eurowaternet is designed to give a representative assessment of water types and variations in human pressures within a country and also across the EEA area. It

ensures that similar types of water bodies are compared, including rivers, lakes (reservoirs) and groundwater, in terms of both quality and quantity. There are three networks which will be progressively implemented: a basic network, an impact (policy-related) network, and a fully representative network.

During the period 1994–2000, Eurowaternet has been developed in five different layers: Eurowaternet/Rivers, Eurowaternet/Lakes, Eurowaternet/Groundwater, which are the most developed, and Eurowaternet/Emissions and Eurowaternet/Quantity, which are still experimental. Eurowaternet has also been developed in the Phare Countries by ETC/IW working closely with its counterpart, the Phare Topic Link on Inland Waters. Data from Eurowaternet is stored in Waterbase, which is described later.

3.2.1. *Eurowaternet/Rivers*

For the basic river quality network, countries are asked to identify a representative number of monitoring stations on different sized rivers. The stations are also to be representative of the pressures in the upstream catchment. Reference stations are also requested in catchments with little or no human activity. Trans-boundary (into seas and between countries) flux stations, and stations on the largest and most important rivers in each country are also included.

Information and data on the physical characteristics (e.g. catchment area and altitude) and upstream catchment pressures (e.g. catchment land use) are required for each selected station. During the 1994–2000 period, Eurowaternet/Rivers has concentrated on two types of water quality determinants: nutrients and those indicatives of organic pollution. The following map illustrates the results obtained in the implementation of Eurowaternet/Rivers.

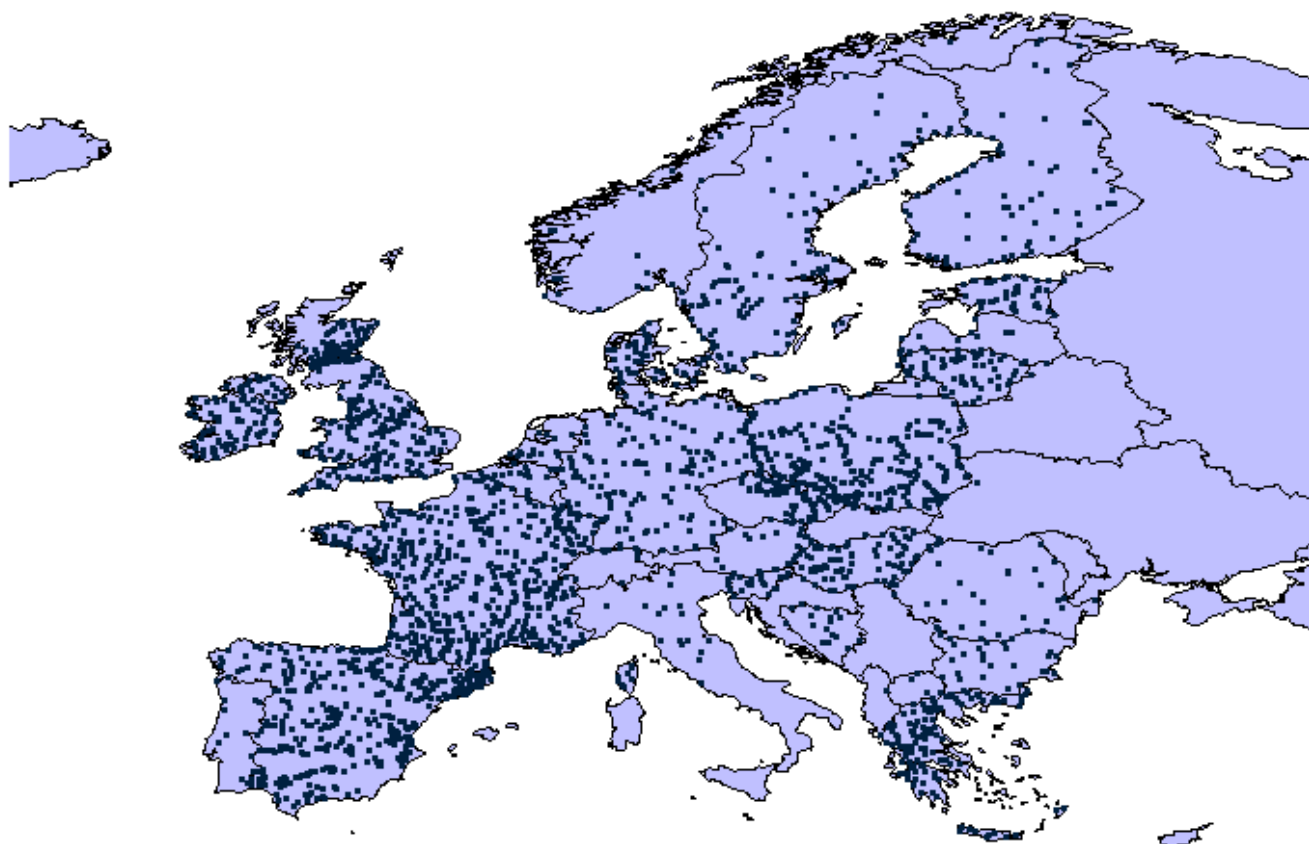
Table 4 summarises the information arising from Eurowaternet in terms of numbers and types of basic river stations, physical characteristics and pressures received from countries to date (December 2000). Also given is the date of the most recent water quality information received. This information is stored in Waterbase. Map 1 illustrates the current extent of the network.

Table 4: Summary of country contributions to Eurowaternet/Rivers
(Y = yes, N = no provided information; upper table contains EEA member countries, the lower Phare countries)

	Austria	Belgium	Germany	Denmark	Spain	Finland	France	Greece	Ireland	Iceland	Italy	Liechtenstein	Luxembourg	The Netherlands	Norway	Portugal	Sweden	United Kingdom
Reference stations	-	-	2	2	-	-	3	4	5	-	-	-	-	-	-	-	8	2
Representative stations	241	-	147	37	401	147	466	124	56	-	39	-	-	40	6	-	57	268
Flux stations	-	1	-	3	-	-	8	-	-	-	-	-	-	-	10	-	3	11
Important rivers	6	8	16	4	15	8	24	6	4	-	16	-	1	13	-	13	10	17
Nutrient data (N/P)	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y	N/Y	Y/Y	Y/Y	Y/Y		Y/Y			Y/Y	Y/N	Y/Y	N/Y	Y/Y
Organic pollution	Y	Y	Y	Y	N	Y	Y	Y	Y	-	Y	-	-	Y	N	N	N	Y
Most recent year	98	96	98	98	96	99	98	98	96	-	92	-	-	99	-	-	97	99
Physical characteristics	Y	Y	Y	Y	Y	Y	Y	N	N	-	Y	-	-	N	Y	Y	Y	Y
Pressures data	N	N	Y	Y	N	N	Y	N	N	-	N	-	-	N	N	-	Y	Y

	Bulgaria	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovak Republic	Slovenia	Albania	Bosnia Herzegovina	F. Y.R. of Macedonia
Reference stations	11	8	10	6	5	8	3	9	9	2	-	18	-
Representative stations	100	72	21	63	42	33	69	-	28	15	-	-	6
Flux stations	8	-	26	26	12	12	33	-	1	9	-	-	-
Important rivers	-	-	2	1	6	16	31	-	21	-	-	-	-
Nutrient data (N/P)	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y	Y/Y	N	Y/Y	Y/Y	-	Y/Y	Y/Y
Organic pollution	Y	Y	N	Y	Y	Y	Y	N	Y	Y	-	Y	Y
Most recent year	96	00	00	99	00	99	00	96	00	00	-	89	96
Physical characteristics	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	-	Y	Y
Pressures	N	Y	N	Y	N	Y	Y	N	Y	Y	-	N	N

Map 1: Eurowaternet — river stations



3.2.2. *Eurowaternet/Lakes*

For the basic lake quality network, countries are asked to submit a defined number of representative monitoring stations on different sized lakes. The stations are also to be representative of the pressures in the upstream catchment. Reference lakes/stations are also requested (where possible) in catchments with little or no human activity. The largest and most important lakes in each country are also included.

Information and data on the physical characteristics (e.g. catchment area, surface area, depth and altitude) and upstream catchment pressures (e.g. catchment land use) are also required for each selected lake. To date, Eurowaternet/Lakes has concentrated on two types of water quality determinedness: nutrients and those indicative of organic pollution.

Table 5 summarises the information arising from Eurowaternet/Lakes in terms of numbers and types of lakes and lake stations, physical characteristics and pressures received from countries to date (December 2000). Also given is the date of the most recent water quality information received. This information is stored in Waterbase. Map 2 shows the location of lake stations for which there is geo-referenced information.

Map 2: Eurowaternet/Lakes stations

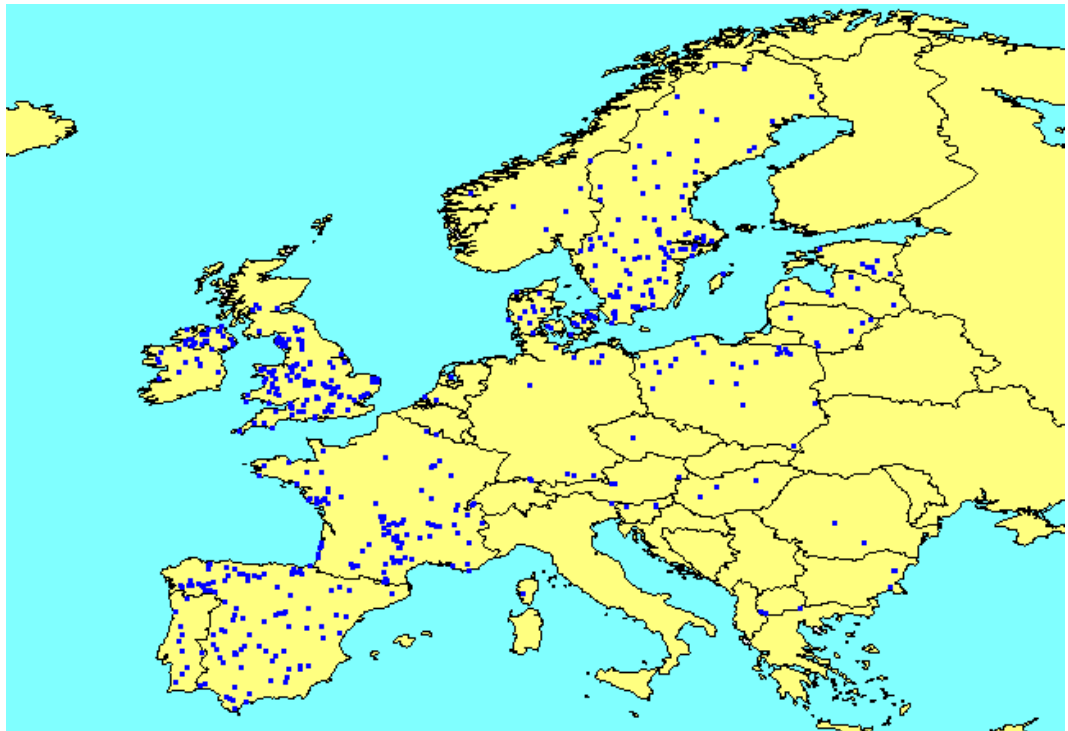


Table 5: Summary of country contributions to Eurowaternet/Lakes
(Y = yes, N = no provided information; upper table contains EEA member countries, the lower Phare countries)

	Austria	Belgium	Germany	Denmark	Spain	Finland	France	Greece	Ireland	Iceland	Italy	Liechtenstein	Luxembourg	The Netherlands	Norway	Portugal	Sweden	United Kingdom
Reference lakes	-	-	-	3	1	44	2	-	4	39	-	-	-	0	197	1	80	-
Representative lakes	26	-	14	23	101	170	98	-	25	-	-	-	-	19	38	9	16	131
Largest lakes	-	-	-	1	-	39	-	-	3	-	-	-	-	3	3	-	-	-
Phosphorus data	Y	-	Y	Y	Y	Y	Y	-	Y	Y	-	-	-	Y	Y	Y	Y	Y
Nitrogen data	N	-	Y	Y	Y	Y	Y	-	Y	Y	-	-	-	Y	Y	Y	Y	Y
Chlorophyll	N	-	Y	Y	Y	Y	Y	-	Y	N	-	-	-	Y	Y	Y	Y	Y
Secchi depth	Y	-	Y	Y	Y	Y	Y	-	Y	N	-	-	-	Y	Y	Y	Y	Y
Most recent year	98	-	98	98	96	99	95	-	99	99	-	-	-	99	99	93	96	96
Physical characteristics	Y	-	Y	Y	Y	Y	Y	-	Y	Y	-	-	-	Y	Y	Y	Y	Y
Pressures	N	-	N	Y	N	N	N	-	N	N	-	-	-	Y	N	N	N	N

	Bulgaria	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovak Republic	Slovenia	Albania	Bosnia-Herzegovina	F.Y.R. of Macedonia
Reference lakes	1	-	2	-	5	2	4	-	-	-	-	-	-
Representative lakes	26	-	11	7	2	7	6	-	-	5	-	-	3
Largest lakes	-	-	9	6	-	-	-	-	-	-	-	-	-
Nutrient data (N/P)	Y/Y	N/N	Y/Y	Y/Y	Y/Y	Y/Y	N/Y	N/N	N/N	Y/Y	-	-	Y/Y
Organic pollution	Y	N	Y	Y	Y	Y	N	N	N	Y	-	-	N
Most recent year	96	N	98	98	98	96	98	N	N	Y	-	-	95
Physical characteristics	Y	N	Y	Y	Y	Y	Y	N	N	Y	-	-	N
Pressures	N	N	N	Y	N	Y	Y	N	N	Y	-	-	N

3.2.3. Eurowaternet/Groundwater

For the groundwater network, countries are asked to submit information on all important groundwater bodies (groundwater in porous media, karst groundwater and others), including both shallow and deep aquifers. A groundwater body is defined as important when at least one of the three requirements is met: larger than 300 km², of regional, socioeconomic or environmental importance in terms of quantity and quality, or exposed to severe or major impacts.

For each groundwater body, a general characterisation, including physical characteristics, (hydro) geological and pressure information, is required as well as information on groundwater quality. The current update process continues the

data collection, which was initiated by a pilot study. The pilot study aimed to test the proposed technical guidelines for the implementation of Eurowaternet and to demonstrate how Eurowaternet/Groundwater can enable the EEA to answer general, as well as more specific, questions on the condition of groundwater bodies and to give an overview of the quality status. During the 1994–2000 period, Eurowaternet/Groundwater focused on quality issues, in particular on the nitrogen determinants nitrate, nitrite and ammonium, supported by dissolved oxygen. The following diagram shows the results of the implementation of Eurowaternet/Groundwater during this period.

Table 6 summarises the information arising from Eurowaternet/Groundwater in terms of numbers of groundwater bodies being identified as important and in terms of information on the general characterisation received from countries to date (December 2000). Also given is the date of the most recent water quality information received. This information is based on already available data and is held in Waterbase.

Table 6: Summary of country contributions to Eurowaternet /groundwater (Y = yes, N = no provided information; upper table contains EEA member countries, the lower Phare countries)

	Austria	Belgium	Germany	Denmark	Spain	Finland	France	Greece	Ireland	Iceland	Italy	Liechtenstein	Luxembourg	The Netherlands	Norway	Portugal	Sweden	U.Kingdom
Important GW bodies reported	14	-	-	3	3	41	-	130	3	-	-	-	-	9	-	-	3	6
General characteristics	3	-	-	3	3	41	-	130	3	-	-	-	-	9	-	-	3	6
Quality data	14	-	8	3	3	41	-	86	3	-	-	-	-	9	-	-	3	6
Most recent year	98	-	99	98	99	98	-	98	98	-	-	-	-	98	-	-	98	98
Maps	Y	-	N	N	Y	Y	-	Y	Y	-	-	-	-	Y	-	-	Y	N

	Bulgaria	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovak Republic	Slovenia	Albania	Bosnia-Herzegovina	F.Y.R. of Macedonia
Important GW bodies reported	74	-	30	10	4	4	173	-	10	5	-	-	-
General Characteristics	74	-	30	10	4	4	3	-	-	5	-	2	-
Quality data	23	-	29	10	4	4	3	-	-	5	-	-	-
Most recent year	98	-	98	98	99	99	99	-	-	98	-	-	-
Maps	Y	-	Y	Y	Y	Y	Y	-	Y	Y	-	-	Y

The future development of Eurowaternet and Waterbase was discussed at the Silkeborg workshop (see Section 2.5). The water framework directive is the key policy framework for assessment and Eurowaternet is a network from which data could be derived for reporting to the Commission. The EEA will focus Eurowaternet development on the needs of the proposed core indicators, and in

parallel, develop Eurowaternet, Waterbase and indicators to incorporate transitional, coastal and marine waters consistently with water framework directive needs.

The next stage of the implementation of Eurowaternet/Rivers and Eurowaternet/Lakes will include the development of an impact network and a fully representative network. Data will also be required on hazardous substances, biology and eventually on ecological and hydromorphological or physical status. In the future, the implementation of Eurowaternet/Groundwater will see the stepwise inclusion of all important groundwater bodies into the network, the extension to further determinants, the stepwise closing of gaps in already existing general characterisations, and the supplementing of time series.

3.2.4. Eurowaternet/Emissions (pressures)

The EEA requires information on:

- the status of Europe's inland water resources, quantity and quality (status and trends assessments);
- how that relates and responds to 'pressures' on the environment (to derive possible cause-effect relationships).

This information on emissions and pressures will also be obtained through Eurowaternet and must, as far as possible, be timely, targeted, relevant and reliable to policy-making agents and the public in the same way as the other Eurowaternet systems. An assessment of existing international reporting requirements indicates that none of the existing sources of information on emissions completely meets the needs of the EEA. The ETC/IW is, therefore, seeking ways of harmonising the collection of information on emissions at a European level. For example, harmonising reporting cycles, frequencies and methods and the implementation of common guidelines between marine conventions would potentially greatly improve the situation.

Eurowaternet at the moment uses 'proxy' indicators of the pressures in the catchments above lakes and rivers, and in the recharge areas of groundwater bodies in the assessment of Europe's water resources. For example, these proxy pressure indicators can be based on land-use categories (defined by Corine) and on catchment population density.

The ETC/IW is thus developing methodologies for the more precise estimation of emissions from point and diffuse sources. It is hoped that estimates of emissions will supplement the current proxy indicators. To that end, a data collection guidebook is being developed and piloted in a few volunteer countries including France and the Netherlands. These methods will be consistent with those required for the water framework directive, and for other international initiatives such as those for international sea conventions (e.g. the HARP initiative in the OSPAR area). The information on emissions will be stored in Waterbase and used to formulate appropriate indicators for the issues that the EEA is required to assess.

As an example, the pressure indicators used to assess eutrophication in *Environmental signals 2000* are listed below:

- nitrogen run-off and fertiliser application in selected European areas;
- sources of phosphorus in selected European countries and catchment areas;
- nitrogen balance for agricultural soil in EU Member States;

- developments in wastewater treatment in European regions;
- discharges of phosphorus from urban wastewater treatment plants.

3.2.5. Eurowaternet/Quantity

During the period 1994–2000 the EEA and the ETC/IW undertook studies into the sustainable use of water in Europe. Sustainable use of the freshwater resource can only be assured if the rate of use does not exceed the rate of renewal. Striking this balance requires careful management, a reliable quantitative assessment of the water resource and a thorough understanding of the hydrological regime. The need to monitor the various components of the hydrological cycle has been widely accepted in Europe for many years. Consequently, the region benefits from a relatively dense network of hydrometric (river gauging stations) and meteorological stations having good quality long-term data. Yet, methods for calculating the availability of freshwater resources vary considerably from country to country making comparisons difficult. The ETC/IW studies have thus revealed serious shortcomings and unreliability in national and international information on water resources, and it was obvious that, in many areas, few meaningful data are available.

Future development should concentrate on the improvement of the state of information, trying to establish reliable records on a European scale and provide meaningful information to decision-makers. Consistent with the desire for the streamlining of reporting at the European level, it would be desirable for one organisation to be responsible for data collection on water resources and demand. The aim is to provide users and policy-makers with reliable and homogeneous data based on the same definitions and concepts. The EEA and the ETC/IW have therefore been working closely with Eurostat and member countries to improve the quality of the required information. It is proposed that Eurowaternet be used to provide the required data on water availability. Eurostat is in turn leading initiatives to improve the quality and comparability of data on water abstractions and uses of water by different economic sectors.

Eurowaternet/Quantity is designed to provide information on:

- the status of Europe's inland water resources, 'quantity' and quality (status and trends assessments);
- how that relates and responds to pressures on the environment.

Technical guidelines have been produced on how Eurowaternet/Quantity can provide the required information by selecting monitoring stations from national networks measuring precipitation, natural internal inflow and actual outflow. A detailed pilot study has been undertaken in Spain. The results using Eurowaternet/Quantity gave a good representation of annual water availability in Spain compared to those figures obtained using the entire, denser national networks. The procedure now needs to be tested in other volunteer countries, and progressively implemented across Europe. Other countries and international hydrological networks have been contacted for support.

The information from Eurowaternet/Quantity will be stored in Waterbase, and the data sets obtained will be used to formulate indicators of water stress such as the exploitation index and consumption index. These indicators will be part of the core set of water indicators developed by the EEA and ETC/IW and will be presented periodically in the environmental signals reports. These indicators are

particularly policy-relevant in terms of the water framework directive which has the purpose of promoting sustainable water use based on a long-term protection of available water resources.

3.2.6. Waterbase

The European Commission, EEA, EEA member countries involved in the European environmental information and observation network (Eionet), non-governmental organisations and the general public have different requirements for information on the environment.

This will involve the construction and maintenance of a number of databases regarding the water environment, which are known collectively as Waterbase. This will be made accessible using the Internet.

Waterbase is, therefore, an information system offering facilities needed to collect, validate, evaluate, store and visualise water environment data and statistics and (meta) information on water quality and quantity monitoring networks and stations. Waterbase also makes this data available at different aggregated levels, for different information users and through different distribution channels. Such a varied target group requires that the system, as far as is practicable, should provide information that matches the needs of each individual group. This has important consequences for how and where the system may be accessed, for user-interfaces and for data presentation and visualisation applications.

Since 1998, the EEA and its ETC/IW have developed Waterbase to receive the data flows arising from Eurowatnet. Between 1998 and 2000, the Irenie project produced a demonstration of how Waterbase could be visualised on the world wide web. Irenie stands for improved reporting of environmental information using Eionet, and was an applied research project carried out in the framework of the telematics application programme of the European Commission, with financial contributions from the European Commission and the EEA. The ETC/IW and ETC/AQ were partners in the project consortium. This project has developed demonstrators for the partners and a common module has been developed with the ETC/IW. This module is installed at the ETC/IW and allows the visualisation of Waterbase/Rivers data with alpha-numeric interface and map interface. Its main functionalities are:

- zoom, selection of station;
- show data and meta-data;
- present data in table form;
- visualise data as graphs;
- general public access to Waterbase data.

Waterbase was further developed in 2000 under the IDA programme (the Teresa project) so that the databases held by the partners of the ETC/IW could be consolidated into one 'reference' Waterbase which is a MySQL application with data transfers effected through XML. This development, which brings Waterbase into line with new Eionet standards, will allow Internet applications for a large number of simultaneous users. The IDA and EEA funded project included the following steps:

- develop an overall data model for all Waterbase modules including a data dictionary;
- develop a reference database and data management applications based on MySQL DB software and XML data exchange format;
- install a data base and applications on the ETC/IW Eionet server;
- import data from working database into reference database;
- test and evaluate reference database and applications.

This database integrates data models from Eurowaternet/Rivers, Eurowaternet/Lakes and Eurowaternet/Groundwater.

The EEA has identified the following priorities for the further development of Waterbase:

- enhancements to the geographical web interface;
- development a data exchange module for Eurowaternet data collection;
- Possible extensions of data model and integration of data into the reference database:
 - emissions data collected under Eurowaternet;
 - quantity data collected under Eurowaternet;
 - data collected under water framework directive including the Commps database;
 - marine water data.

3.3. Main policy support activities

The work of the ETC/IW in policy support was built on the following areas of work as listed in the amended regulation (EC 933/1999):

- water quality, pollutants and water resources;
- chemical substances which are hazardous for the environment.

Two main areas of activity were: support to activities within EU legislation development and implementation, and support to international conventions.

The investment in Eurowaternet so far has resulted in a process agreed by all member countries to be an effective way of providing national data and information for European reporting on freshwater issues. Data flows into Waterbase are now being focused on data for the core set of water indicators being developed by the current ETCs to feed the assessments needed for preparing the EEA 'Environmental signals' reports and other main EEA publications. In addition, a great deal of effort has been invested in supporting the Commission and Member States in the development of the annexes to the water framework directive and issuing a number of technical guidelines for the EU Member States Expert Group. The capacity of Eurowaternet is such that it can act as the reporting process for the framework directive, and Waterbase has been designed to accommodate the data flows.

Guidance has been given to Commission officials on the reporting requirements of several directives and it is clear that the present focus on Eurowaternet/Basic will need to be extended to support policy development for:

- the water framework directive;
- the nitrates directive;
- the urban wastewater treatment directive; and, to a lesser extent
- the reporting directive;
- the drinking water directive;
- the bathing water directive.

This means that the current network of stations and determinants gathered under Eurowaternet/Basic will need to be upgraded to cover physical and biological determinants to meet the monitoring requirements and the needs for ecological assessments of, in particular, the proposed water framework directive. In addition, there is a need to establish a so-called impact network required by these directives. In this context, discussions are underway between the EEA and the Environment DG to see how Eurowaternet could be used to supply information to the EEA for its purposes and to the Commission to satisfy the needs of the proposed water framework directive and other directives.

In addition, support to the enlargement process was enhanced by the establishment of a Phare topic link on inland waters which greatly increased the capacity of the accession countries to critically review and improve their monitoring networks for the purposes of providing data for international as well as national needs.

The EEA is facilitating memoranda of understanding with the marine conventions (Helcom, OSPAR, and possibly ICES) and has, with the support of the ETC/IW, been discussing opportunities for sharing databases with the conventions and harmonising reporting. These investments have been made with the aim to maintain, encourage and further develop data flow from countries to meet the need for European assessment and reporting on water issues at the relevant scale.

In cooperation with the marine conventions, the ETC/IW has begun to harmonise marine monitoring and data flow within the coastal maritime area as defined in the water framework directive. The Inter-Regional Forum should focus in the future on the exchange of information and experience, and coordinate the development of harmonised assessment tools.

The new ETC/Water will make use of products of the marine conventions to support or accelerate the streamlining of information gathering and reporting procedures. The benefits to the Commission, member countries and the EEA will be substantial.

The main policy supporting activities are summarised in Table 7.

Table 7: Main policy support activities

EU legislation support	Theme	EEA reports	Advice	Data management dissemination	Guidance
water framework directive	All themes		*	* (through Eurowaternet)	*
IPPC directive/EPPR	All themes		*		*
UWWT directive	Water quality, eutrophication	*	*		
Nitrate directive	Water quality, eutrophication	*	*		
Dangerous substances	Water quality, chemicals	*	*		
Reporting directive	Water quality	*	*		
Drinking water	Water quality, health	*	*		
Bathing water	Water quality, health		*		
Exchange of information decision	Water quality	*	*	*	
International conventions support					
UNECE Convention on Trans-boundary Rivers and Lakes	Water resources, water quality		*		
UNECE Working Group on Environmental Monitoring	Surface waters, Eurowaternet		*	*	
OSPAR Convention	Riverine inputs, eutrophication, hazardous substances		*		
Helsinki Convention	Riverine inputs, eutrophication, hazardous substances,		*		
Black Sea environmental programme (BSEP)	Riverine inputs		*		

4. Products/outputs produced by the ETC/IW (1994–2000)

4.1. Published reports (1994–2000)

The following table summarises the reports produced by the ETC/IW and published by the EEA in 1994–2000 (except where indicated).

Report	Reference	Title
	ISBN 92-827-8952-7	Quality of surface freshwaters. Common procedure for the exchange of information. 1990–92. Synthesis report. August 1995, CEC (1995)
Assessment report	1/99	Sustainable water use in Europe, Part 1: Sectoral use of water
	3/99	Groundwater quality and quantity in Europe
	4/99	Nutrients in European ecosystems
Issue report	19/01	Sustainable water use in Europe: Part 2: Demand management
	20/01	Sustainable water use in Europe: Part 3: Extreme hydrological events.
	7/00	Sustainable use of Europe's water? Synthesis report
Topic report	1/96	Requirements for water monitoring
	2/96	Surface water quality monitoring
	3/96	Surface water quantity monitoring
	4/96	Water quality of large rivers
	5/96	Annual summary report, 1995
	10/96	European freshwater monitoring network design
	11/96	European freshwater monitoring network (Summary)
	13/96	Human interventions in the hydrological cycle
	14/96	Groundwater monitoring in Europe
	15/96	Water resources problems in southern Europe
	16/96	International water databases
	1/97	Annual summary report, 1996
	1/98	Annual topic update, 1997
	2/99	Annual topic update, 1998
	1/99	Lakes and reservoirs in the EEA area
		Water resources and human health in Europe executive summary
	1/00	Annual topic update, 1999
Technical report	7/98	Eurowaternet: Technical guidelines for implementation
	8/98	Common tools for emissions and waste: integrated inventories, a European inventory of emissions to Inland Waters: a first proposal
	22/99	Groundwater quality and quantity in Europe, data and basic information
	39/00	Pilot implementation of Eurowaternet groundwater
Internal technical report		Report on the implementation of Eurowaternet and Waterbase
		Report on the gathering of data on emissions to water
		Report on the standardisation of water resource data and indicators

4.2. Reports to be published by the EEA (or others)

Environmental assessment reports:
Joint EEA/WHO report on water resources and human health in Europe
Topic and technical reports:
Standardised reporting directive: report on Member States returns for 1993–95 reporting period (to be published by the Commission)
Comparative analysis of river quality classification systems in Europe
Annual topic update 2000