Eurowaternet and Waterbase

The European Environment Agency's monitoring and information network for inland water resources and transitional, coastal and marine waters

European Environment Agency

Eurowaternet and Waterbase

Background

The European Environment Agency (EEA) is the EU body dedicated to providing sound, independent information on the environment.

The EEA is a main information source for those involved in developing, adopting, implementing and evaluating environmental policy, and also the general public.

Countries, the EEA and the European Commission have a joint interest in data and information on the status and trends of Europe's waters (surface, underground, fresh, transitional and coastal/marine) and how these relate and respond to pressures on the environment.

EEA member and collaborating countries (in total around 40) organise and transmit their data on water from the national to the European level. This information network is called Eurowaternet.

The information gathered through Eurowaternet is used, with data from other international sources, to construct the core set of water indicators and fact sheets, which are the basis of EEA assessments and reports. Data are also made available over the Internet via Waterbase hosted by the EEA Data service.

Eurowaternet is built upon the framework of Reportnet — the electronic infrastructure and web-tools for streamlining flows of environmental information in Europe (see final box for more information on Reportnet).

Eurowaternet — a contribution to a common European information system

Eurowaternet was set up for reporting to the EEA but is now being adapted for reporting to the European Commission and international organisations as well.

The EEA and the European Commission have made a commitment to develop a common Water Information System for Europe (WISE) and have it operational by 2010.

Key concepts

Eurowaternet is designed to give a representative assessment of water types and variations in environmental pressures caused by human activity across Europe. It is based on sample stations in existing national monitoring networks and programmes. The need for comparability (comparing like with like) is achieved with a statistically layered design. Each defined layer contains similar water bodies. The use of the same criteria for selecting layers and water types across the countries ensures the basis for valid status comparisons.

Eurowaternet — a network of networks

Eurowaternet — Rivers (R), is a network of river stations from each country. The network also includes canals.

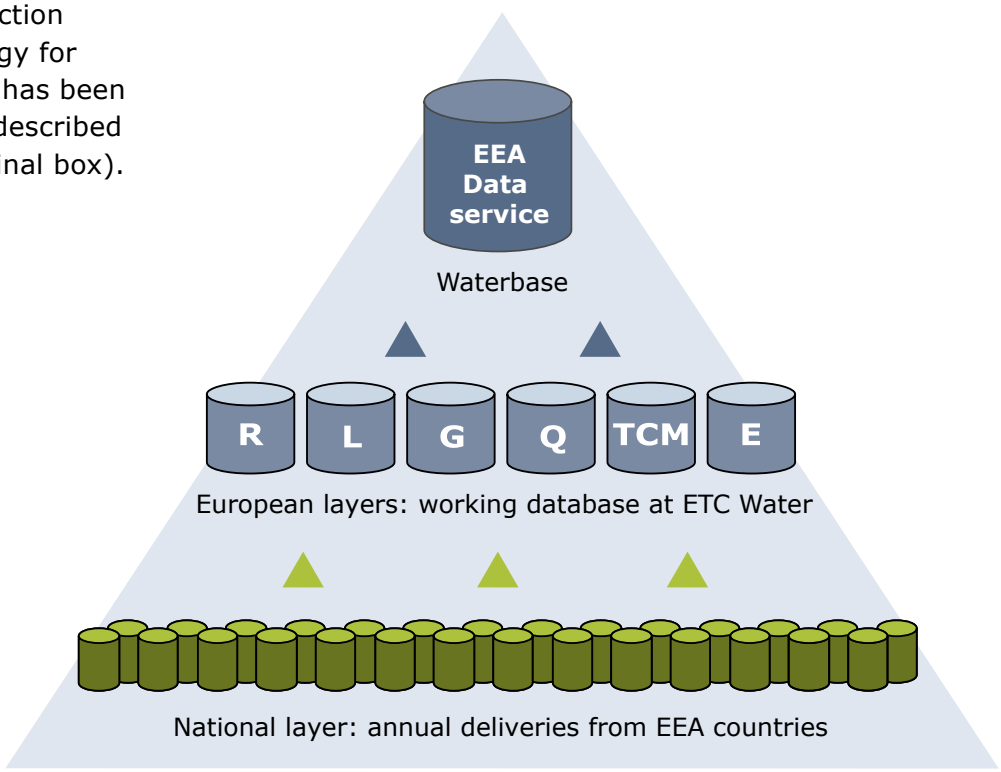
Eurowaternet — Lakes (L), is a network of lake and reservoir stations from each country.

Eurowaternet — Groundwater (G). Member countries have been asked to select important groundwater bodies according to criteria defined in technical guidelines (see final box). Monitoring data from these bodies provides a general overview of groundwater quality at the European level based on truly comparable data.

Eurowaternet — Quantity (Q), is aimed at obtaining comparable information on the status of inland water resources. Station selection procedures and a methodology for water resources assessment has been agreed with Eurostat and is described in technical guidelines (see final box).

Eurowaternet — Transitional, coastal and marine waters (TCM). Criteria for the selection of transitional, coastal and marine water monitoring stations are also described in technical guidelines (see final box). Data are requested for quantities of substances entering the sea through rivers and substances monitored in living creatures (e.g. fish and mussels), seawater and sediment.

Eurowaternet — Emissions (E), has the objective of bringing together emissions data in a comparable way. These data are currently being reported by member countries for national and international purposes (such as for the marine conventions and the European Pollutant Emission Register (EPER)). It has been tested on several data sources and is now being applied to some volunteer pilot river basin studies as part of the common implementation strategy for the Water Framework Directive.



Eurowaternet: from national monitoring to the EEA data service

Eurowaternet and Waterbase

Types of Eurowaternet stations

Reference stations — in catchments (the area drained by a river or lake) with little or no human activity and with the percentage of natural landscape higher than 90 %. Substances measured at these stations would give an indication of 'background levels'.

Representative stations — these reflect the majority of rivers or lakes in a region/area with human activities in the catchment consistent with activities in the region/area as a whole. The water quality at these stations would be influenced by diffuse (i.e. not entering the river or lake at a recognisable point) sources of pollution and/or point sources depending on the human activities upstream. This type of station is likely to be included in 'surveillance' monitoring programmes as required by the water framework directive. Many of these stations have a long time series of data.

Flux stations — currently being used for assessment of the quantities of harmful substances entering or leaving the country in international rivers or being discharged into Europe's seas.

Largest and most important stations — monitoring sites on the nationally most important or well known rivers/lakes.

Impact stations — monitoring stations in the immediate vicinity of a discharge point in a river or lake. Concentrations of substances are expected to be relatively high at these stations because mixing and dilution has not yet taken place. These stations may be used by the pollution control authorities to assess whether or not standards or limits are being exceeded. This type of station is likely to be included in 'operational' monitoring programmes as required by the water framework directive. Many of these stations have a relatively long time series of data.

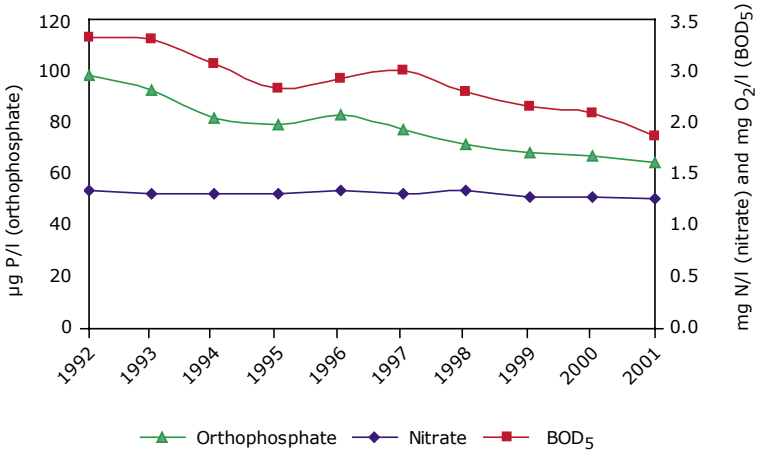
Waterbase

Waterbase contains a series of web pages through which the user can access nationally validated, aggregated data and information on the status and quality of Europe's water environment. Although many countries make their monitoring data available over the Internet (e.g. in state-of-the-environment reports), the level and form of accumulation and combination of data often varies from country to country which makes detailed quantitative comparisons difficult. Waterbase data collected through the Eurowaternet network are comparable at the European level.

Waterbase data are primarily used in the production of the EEA's indicator fact sheets, which are the basis of European assessments.

The first indicator-based thematic report of the EEA was *Europe's water: an indicator-based assessment* (see final box).

Example indicator: trends in concentrations of nutrients and organic matter in European rivers



Note: BOD_5 (Biochemical oxygen demand) shows how much dissolved oxygen is being consumed in the sample during five days as microbes break down organic matter. A high demand, therefore, can indicate that dissolved oxygen levels in rivers are low, with potentially dangerous implications for aquatic biodiversity.

Over the last 10 years the concentrations of orthophosphate and organic matter have been steadily decreasing in European rivers reflecting improved waste water treatment. The concentration of nitrate however remains constant reflecting that diffuse pollution from agricultural land is still the main source of nitrate in water.

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For more information

Eurowaternet guidelines:
Rivers, lakes and groundwater:
http://reports.eea.eu.int/TECH07/en
Transitional, coastal and marine:
http://reports.eea.eu.int/technical_report_2003_97/en
Quantity:
http://reports.eea.eu.int/technical_report_2003_99/en

Waterbase:
http://dataservice.eea.eu.int/dataservice/available2.asp?type=findkeyword&theme=waterbase
Indicators:
http://themes.eea.eu.int/Specific_media/water/reports/indicators
EEA:
http://www.eea.eu.int/
ETC Water:
http://water.eionet.eu.int/
Europe's water: an indicator-based assessment:
http://reports.eea.eu.int/topic_report_2003_1
Reportnet:
http://www.eionet.eu.int/rn/reportnet2003.pdf

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Ulla Pinborg, Danish Forest and Nature Agency, Denmark
Rolf Kuchling, European Environment Agency, Denmark

Contact information
European Environment Agency
Kongens Nytorv 6
1050 Copenhagen K
Denmark
Tel. (45) 33 36 71 00
Fax (45) 33 36 71 99
Enquiries: http://www.eea.eu.int/enquiries
Website: http://www.eea.eu.int

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