



Water Note 8

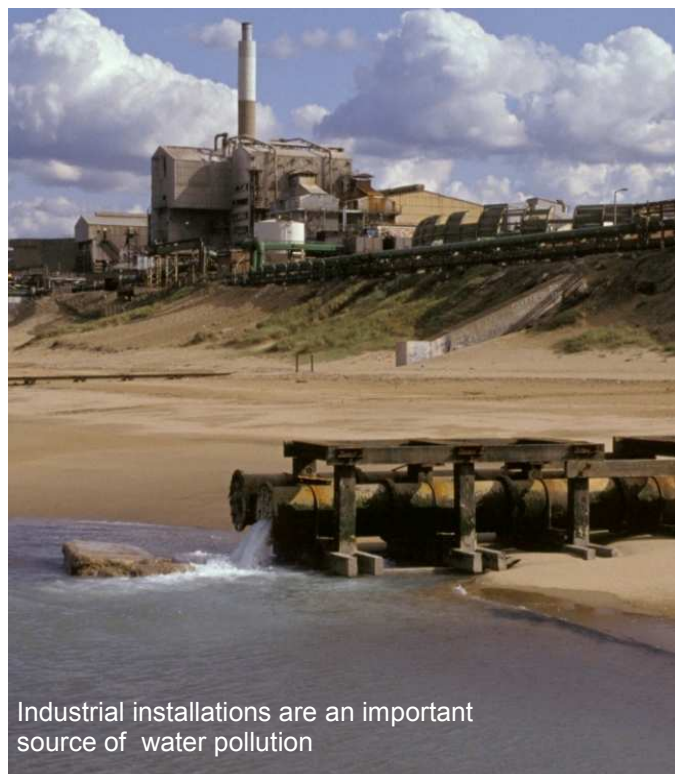
Pollution: Reducing dangerous chemicals in Europe's waters

Clean water is vital for public health and ecosystems. The Water Framework Directive aims to ensure the good chemical status of both surface water and groundwater bodies across Europe.

For surface waters this goal is defined by limits on the concentration of specific pollutants of EU relevance, known as *priority substances*. To date, 33 priority substances have been identified. A new Directive, published in December 2008, establishes limits, known as Environmental Quality Standards (EQS), for these 33 substances and for an additional 8 substances regulated under previous legislation.

The Water Framework Directive also calls for surface waters to meet good ecological status, which provides a measure of healthy ecosystems. To achieve this objective, Member States may need to ensure that additional pollutants of national relevance are controlled.

The Water Framework Directive also requires good chemical status for ground water. It is reinforced by the 2006 Groundwater Directive, which specifies measures to assess, monitor and control groundwater pollution (see water note no. 3).



Industrial installations are an important source of water pollution

Emissions, discharges and losses – combining control measures

Chemicals find their ways into European waters from point sources, such as waste waters from industrial installations, and from diffuse sources, such as pesticide runoff into water from agricultural lands. Chemicals from consumer products and other products can leach into water from unprotected landfills, another diffuse source. In designing measures to control the chemical pollution from these many sources, the Water Framework Directive takes a combined approach. It considers pollution in terms of what is released into the environment and the resilience of the receiving waters.

Releases of chemical pollutants are controlled through a number of pieces of legislation targeting specific activities (see the box below). At the same time, the requirement to meet EQS for priority substances prevents the deterioration of waters by the accumulation of pollution from multiple sources. If the quality for a particular water body is jeopardised, stricter controls going beyond the measures specified in European legislation are needed to be imposed on pollution sources. (In addition, the Bathing Water Directive establishes further controls to protect human health in recreational waters – see water note no. 9.)

The Water Framework Directive establishes a legal framework to protect and restore clean water across Europe and ensure its long-term, sustainable use. (Its official title is Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.) The directive establishes an innovative approach for water management based on river basins, the natural geographical and hydrological units, and it sets specific deadlines for Member States to protect aquatic ecosystems. The directive addresses inland surface waters, transitional waters, coastal waters and groundwater, and it establishes innovative principles for water management, including public participation in planning and economic approaches, including the recovery of the cost of water services.

Articles 4, 10, 11 and 16 and Annexes V, VIII, IX and X of the directive address chemical pollution.

Directive 2008/105/EC of 16 December 2008 establishes Environmental Quality Standards for the 33 first priority substances.

Controlling emissions of chemicals to water

The Water Framework Directive is supported by other EU environmental legislation. The *REACH* Regulation controls chemicals in products to reduce the contamination of water bodies.

The *Directive on Plant Protection Products* (i.e. pesticides) controls pollution from agricultural chemicals and the *Biocidal Products Directive* regulates pest-control and anti-microbial substances used in other sectors. The *Nitrates Directive* limits nitrogen pollution from fertilisers and manure (see water note no. 9).

The *Directive on Industrial Pollution Prevention and Control (IPPC)* regulates pollution from factories and other facilities.

Identifying priority substances

By targeting priority substances, the Water Framework Directive focuses on individual pollutants or groups of pollutants that present significant risk to or via the aquatic environment. The substances are identified through rigorous risk assessments, which involve examining scientific evidence of the hazardous properties of the substances, their contamination of European waters, and other factors such as volumes used.

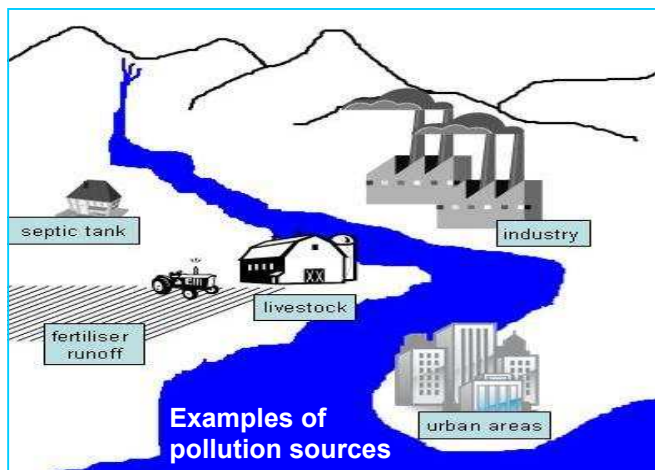
Among the 33 chemicals categorised as priority substances, 13 are designated as *priority hazardous substances* due to their persistence, bioaccumulation and toxicity (see box). The European Commission will review this list every four years, to allow for the inclusion of additional substances of concern.

The Water Framework Directive seeks to progressively reduce emissions, discharges and losses of priority substances to waters. Priority hazardous substances are to be phased out completely within 20 years.

Two types of environmental quality standards are set for priority substances: annual average concentrations and maximum allowable concentrations. The former protects against long-term chronic pollution problems, and the latter short-term acute pollution. Member States are responsible for monitoring the concentrations of priority substances in surface waters as part of their monitoring programmes (see water note no. 6).

Controlling other pollutants

The Water Framework Directive also calls for control measures for a number of other pollutants, such as organophosphorus compounds, metals, and materials in suspension. Member States must address these substances in their river basin management plans. The process of developing such plans involves the identification of point and diffuse pollution sources and the design of appropriate control measures, including measures to address pollution from industrial, transport and other accidents.



Priority hazardous substances

Priority hazardous substances are those priority substances which are toxic, persistent and liable to bio-accumulate (PBTs) and other substances or groups of substances of high concern. The rationale for their selection relates to their behaviour in the environment (REACH follows a similar approach).

PBTs do not break down but persist in the environment and collect in animal and plant tissues, thus posing long-term risks to human health and ecosystems. As PBTs move up the food chain their concentration increases and the risk to humans and ecosystems increases accordingly. Controlling emissions of very small quantities of these substances is therefore required.

Another group of substances of particular concern is endocrine disruptors, chemicals with the potential to interfere with the hormonal systems of humans and wildlife. The Commission is currently evaluating possible endocrine disruptors.

National monitoring and the Water Information System for Europe – WISE

The European Environment Agency is working with Member States to set up a comprehensive network of monitoring stations to provide extensive coverage and detailed investigation of water quality in Europe. Quantitative data on the chemical, physical, and biological water quality is collected and fed into WISE from more than 54,000 surface water monitoring stations and more than 51,000 groundwater stations. Member States use these stations to conduct their monitoring obligations under the Water Framework Directive and ensure that EQS are respected.

To learn more about Europe's waters, see the WISE website at <http://water.europa.eu>. The European Commission's webpages on water management, which are linked to WISE, provide further information on chemical pollution. See: <http://ec.europa.eu/environment/water/water-dangersub/index.htm>.