

Water Note 7

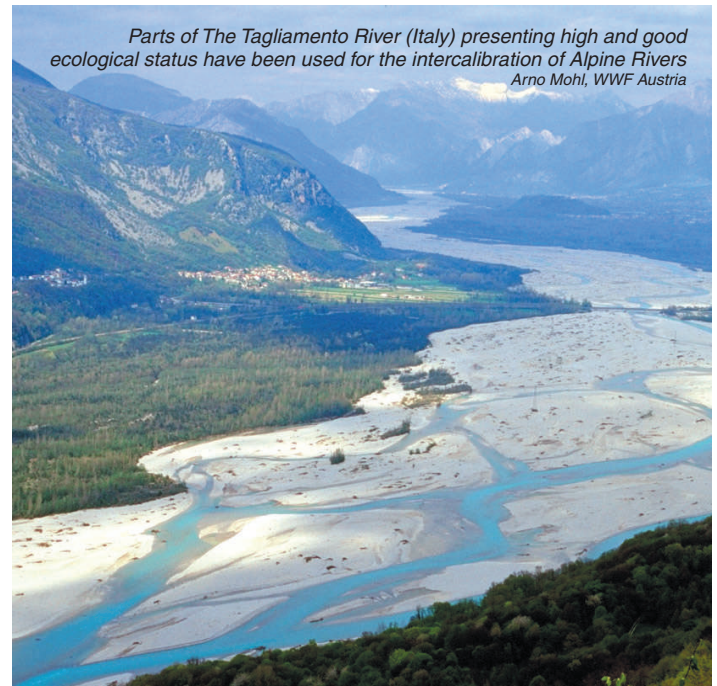
Intercalibration: A common scale for Europe's waters

The Water Framework Directive's innovative approach to water management includes the requirement to ensure the health of aquatic ecosystems. This is embodied in its objective to achieve “good ecological status” of all surface waters by 2015. Work on intercalibration will provide a common scale across Europe to measure progress towards this goal.

Ecosystem health is a new objective for European water policy. Previous legislation focused on cleaning up chemical pollution. The Water Framework Directive itself addresses pollution through its objective of “good chemical status”, but it goes further by recognising that water should also be able to support healthy ecosystems.

While Member States have a great deal of experience in monitoring the chemical status of their waters, measuring good ecological status brings new challenges. Given the wide range of ecosystems found across Europe, using one method to assess all water bodies does not make sense. Instead, the directive establishes a common definition of good ecological status, which Member States must use when developing their national assessment methods.

To ensure that national assessment methods to measure good ecological status deliver comparable results and are consistent with the directive, an intercalibration exercise is required between Member States with the assistance of European Commission.



*Parts of The Tagliamento River (Italy) presenting high and good ecological status have been used for the intercalibration of Alpine Rivers
Arno Mohl, WWF Austria*

The starting point

The directive sets the basic requirements for measuring the health of surface water ecosystems. It identifies four common “quality elements” to be used in determining ecological status: phytoplankton; other aquatic flora; benthic (bottom-dwelling) invertebrate fauna; and fish fauna.

The directive also specifies a five-point scale for surface water quality, from high to bad (see overleaf).

The Water Framework Directive establishes a legal framework to protect and restore clean water across Europe and ensure its long-term and 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 sets specific deadlines for Member States to achieve ambitious environmental objectives for aquatic ecosystems. The directive addresses inland surface waters, transitional waters, coastal waters and groundwater, and establishes innovative principles for water management, including the participation of the public in planning and economic approaches, including recovering costs of providing water services.

Annex V of the directive lists the quality elements to be measured to determine ecological status. It also sets out a five-step classification of surface water bodies and calls for joint work on intercalibration.

Ecological status classes



Based on original by Peter Pollard, Scotland EPA

Working together

The intercalibration exercise took place between 2003 and 2007 and involved hundreds of experts across Europe. The European Commission's Joint Research Centre in Ispra, Italy, coordinated this technical work.

The experts first identified and then studied almost 1500 sites in rivers, lakes and coastal and transitional waters across Europe. These water bodies formed a first network of intercalibration sites in 2005. This network was later expanded, and the intercalibration exercise has used data from many thousands of sites and water bodies across Europe.

The species of fish, invertebrates and plants in Baltic rivers differ from those in Alpine rivers, which in turn differ from those found in Mediterranean rivers. Because aquatic ecosystems vary so widely across Europe, experts set up 14 different Geographical Intercalibration Groups (GIGs). For example, experts from Italy, France, Germany, Austria and Slovenia collaborate in the GIG for Alpine lakes.

Waters also differ within each intercalibration group. Experts in the Alpine group identified two types of Alpine lakes with

distinct ecological characteristics, one at lower and one at higher altitude. Eleven countries participate in the intercalibration group for North-East Atlantic coastal and transitional waters, comparing the ecosystems of seven different types of waters, from shallow coastlines to deep northern fjords.

The goal of intercalibration is not to establish common assessment systems. Each Member State chooses its own methods according to the provisions of the directive. Intercalibration ensures that the different national systems achieve comparable results.

The work focuses on defining the upper and lower boundaries of good status. The line between “good” and “moderate” status is particularly important, as it defines whether or not a water body will meet the directive's 2015 goal of good status.

Results of an unprecedented exercise

Intercalibration for the Water Framework Directive is a very complex scientific and technical exercise. Considering its scale and ambition, there is no comparable precedent for the assessment of ecosystem health in Europe or elsewhere. Many experts doubted whether such an exercise would be possible within the given timeframe and with the limited amount of information that was originally available.

The intercalibration expert groups delivered their results in June 2007, and a Commission Decision will publish them in 2008. The years of intense work have brought a major step forward in protecting European aquatic ecosystems. But much remains to be done. Member States have agreed to continue the exercise to fill the gaps of the work achieved to date. Current work includes the intercalibration of methods for transitional waters such as estuaries: these are found where fresh and coastal waters meet, and they have particularly complex ecosystems.

Member States will use the results of the intercalibration work to prepare and implement their river basin management plans. These plans will identify waters that do not achieve the environmental objectives set out in the directive, along with the measures necessary to improve conditions and reach good status. Intercalibration thus plays a crucial role in identifying where action is needed to restore the quality of Europe's waters.

To learn more about the Water Framework Directive and Europe's waters see the **Water Information System for Europe** (WISE) at water.europa.eu. The European Commission's web pages on water protection, which are linked to WISE, also provide further information: see http://ec.europa.eu/environment/water/water-framework/index_en.html. A wealth of technical information on intercalibration is available from the European Commission's Joint Research Centre CIRCA information system: http://circa.europa.eu/Public/irc/jrc/jrc_eewai/library.