

***Water Framework Directive (WFD)
Common Implementation Strategy:***

Working Group

2.5. Intercalibration

**Towards a guidance on
establishment of the
Intercalibration network
and
on the process of the
Intercalibration exercise**

Foreword

The EU Member States, Norway and the European Commission have jointly developed a common strategy for supporting the implementation of the Directive 2000/60/EC establishing a framework for Community action in the field of water policy (the Water Framework Directive). The main aim of this strategy is to allow a coherent and harmonious implementation of this Directive. Focus is on methodological questions related to a common understanding of the technical and scientific implications of the Water Framework Directive.

In the context of this strategy, an informal working group dedicated to prepare guidance for the technical protocol of the Intercalibration required in the Directive has been set up. The main (short-term) objective of this working group, launched in June 2001, was the development of a non-legally binding and practical guidance document on the technical protocol for the establishment of the intercalibration network and the intercalibration exercise of the Water Framework Directive. The Commission's Directorate General, Joint Research Centre (Institute of Environment and Sustainability) has the responsibility of the leadership and animation of the working group that is composed of technical experts from governmental and non-governmental organisations.

The present guidance document is the outcome of this working group. It contains the synthesis of the output of the INTERCALIBRATION working group activities and discussions that have taken place since June 2001. It builds on the input and feedback from a wide range of experts and stakeholders from both EU Member States and candidate countries that have been involved throughout the process of guidance development through meetings, workshops, conferences or electronic communication media, without binding them in any way to its content.

We, the water directors of the European Union, Norway, Switzerland and the countries applying for accession to the European Union, have examined this guidance during our informal meeting under the Danish Presidency in Copenhagen (21/22 November 2002). We would like to thank the participants of the Working Group and, in particular, the leaders of the Joint Research Centre, for preparing this high quality document.

We recognise that the guidance document represents a significant first step towards the elaboration of a comprehensive approach for intercalibration as required under the directive.

The Water Directors agreed that the document must be developed further during 2003 and beyond. It was stressed that the elaboration of an intercalibration system in line with the requirements of the Water Framework Directive was a major challenge. Pragmatic solutions need to be developed which bridge the gap between the technical and scientific possibilities and the formal requirements. As expressed in the guidance, a step-wise approach should be developed with improvements and refinements being introduced in the light of experience and new information.

The Water Directors highlighted that status of the document as an interim product still under active development.

We agree, however, that this document will be made publicly available in its current form in order to present it to a wider public as a basis for carrying forward ongoing implementation work. Moreover, we welcome that several volunteers have committed themselves to test and validate this and other documents in the so-called pilot river basins across Europe during 2003 and 2004 in order to ensure that the guidance is applicable in practice. We also invite the Working Group to come forward with a further developed document by the end of 2003 taking account of the above comments.

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Introduction - A Guidance Document: What For?

This document aims at guiding experts and stakeholders in the implementation of the Directive 2000/60/EC establishing a framework for Community action in the field of water policy (the Water Framework Directive – “the Directive”). It focuses on the guidance for the procedure of establishment of the intercalibration network and the execution of the intercalibration exercise ensuring comparability of biological monitoring results between the Member States, as required by the Directive.

To whom is this Guidance Document addressed?

If this is your task, we believe the guidance will help you in doing the job, whether you are:

- **Carrying out the analysis for ecological quality classification of surface waters yourself;**
- **Leading and managing experts undertaking the ecological quality classification;**
- **Using the results of the classification for selection of the intercalibration sites, or**
- **Reporting on the results of the classification of the ecological quality of the intercalibration sites to the European Union, as required by the Directive.**

What can you find in this Guidance Document?

Common understanding of Water Framework Directive intercalibration requirements

Extraction and description of the relevant text concerning Intercalibration from the Directive, Annex V. Agreement on what this text means in practical terms

Synthesis of the intercalibration process: problems and possible solution

Description of the timetable of the intercalibration process

Description of practical problems in requirements of the Directive in relation to the implementation timetable in Member States.

Possible solutions to these problems on short-term and long term basis

Possible implications of limited Intercalibration

Description of a practical procedure of the intercalibration process (Fig. 1)

Practical organisation for the selection of intercalibration sites

Roles of Member States and the Commission in the site selection process

Procedure, timetable, and criteria for the selection of water body types for intercalibration

Procedure, timetable and criteria for the selection of intercalibration sites

Deliverables and milestones of the intercalibration process

Artificial and heavily modified water bodies and the intercalibration network

Criteria for the selection of intercalibration sites

Preliminary technical protocol for the intercalibration exercise

Stepwise description of the intercalibration exercise and the tasks of the participants

Guidance on data collection and data exchange

Reporting of the classification results

Expected outcome of the intercalibration exercise

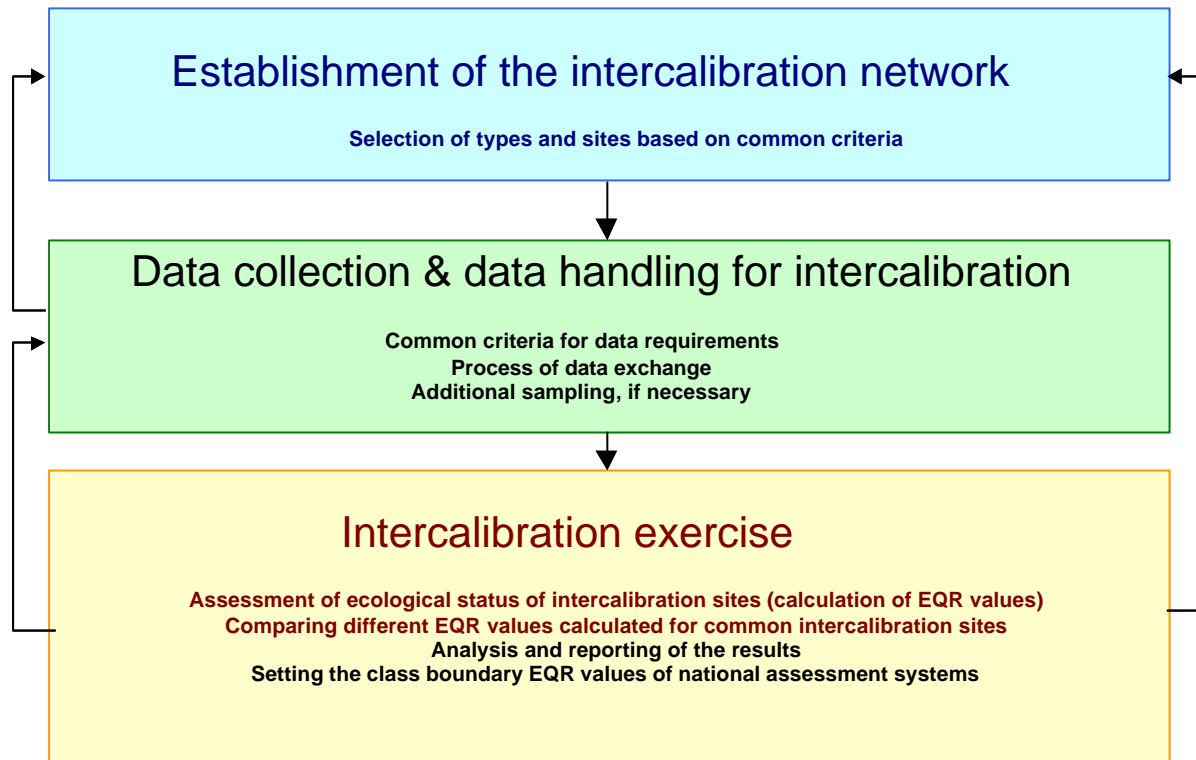
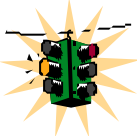
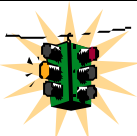


Figure 1. Structure of the Guidance for the process of Intercalibration

	<p>Look out! The methodology from this Guidance Document must be adapted to regional and surface water category specific circumstances</p> <p><i>The Guidance Document describes an overall approach for the selection of intercalibration sites and the intercalibration process. Because of the diversity of the surface waters and their natural conditions in the European Union, the intercalibration process needs to be tailored for the different ecoregions and surface water categories. To achieve this, a procedure is proposed involving experts from all Member States.</i></p>
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	<p>Look out! What you will <u>not</u> find in this guidance document</p> <ul style="list-style-type: none"> • <i>Guidance on how to calculate Ecological Quality Ratios for different quality elements is not included, because:</i> <ul style="list-style-type: none"> - <i>This will depend on the assessment method and metrics that each MS chooses for the assessment of their surface water quality (this is addressed in the Monitoring Guidance)</i> - <i>This will depend on the method that each MS chooses for establishing reference conditions (this is addressed in the REFCOND and COAST Guidance).</i> • <i>Guidance on a common understanding and more specific interpretations of the normative definitions of the quality classes given in the Directive is not included, because:</i> <ul style="list-style-type: none"> - <i>The REFCOND and COAST working groups have started to address these issues, and (to a certain extent) will address these in their guidance documents.</i> - <i>It is proposed that water category and type specific criteria for the normative</i>
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	<p><i>definitions of the high-good and good-moderate class boundaries will be developed by expert groups as a part of the continuation of the ECOSTAT cluster (REFCOND, COAST, and Intercalibration WGs), building on the present guidance documents.</i></p>
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Section 1 – Implementing the Directive: Setting the Scene

This Section introduces you to the overall context for the implementation of the Water Framework Directive and informs you of the initiatives that led to the production of this Guidance Document.

December 2000: A Milestone For Water Policy

A long negotiation process

December 22, 2000, will remain a milestone in the history of water policies in Europe: on that date, the Water Framework Directive (or the 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) was published in the Official Journal of the European Communities and thereby entered into force!

This Directive is the result of a process of more than five years of discussions and negotiations between a wide range of experts, stakeholders and policy makers. This process has stressed the widespread agreement on key principles of modern water management that form today the foundation of the Water Framework Directive.

The Water Framework Directive: new challenges in EU water policy

What is the purpose of the Directive?

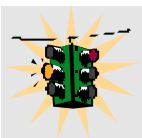
The Directive establishes a framework for the protection of all waters (including inland surface waters, transitional waters, coastal waters and groundwater) which:

- Prevents further deterioration of, protect and enhance the status of water resources;
- Promotes sustainable water use based on long-term protection of water resources;
- Aims at enhancing protection and improvement of the aquatic environment through specific measures for the progressive reduction of discharges, emissions and losses of priority substances and the cessation or phasing-out of discharges, emissions and losses of the priority hazardous substances;
- Ensures the progressive reduction of pollution of groundwater and prevents its further pollution; and
- Contributes to mitigating the effects of floods and droughts.

Overall, the Directive aims at achieving *good water status* for all waters by 2015.

What are the key actions that Member States need to take?

- To identify the individual river basins lying within their national territory and assign them to individual River Basin Districts (RBDs) and identify competent authorities by 2003 ([Article 3](#), [Article 24](#));
- To characterise river basin districts in terms of pressures, impacts and economics of water uses, including a register of protected areas lying within the river basin district, by 2004 ([Article 5](#), [Article 6](#), [Annex II](#), [Annex III](#));
- To carry out intercalibration of the surface water ecological quality status assessment systems by 2006 ([Annex V](#))
- To make operational the monitoring networks by 2006 ([Article 8](#))
- Based on sound monitoring and the analysis of the characteristics of the river basin, to identify by 2009 a programme of measures for achieving the environmental objectives of the Water Framework Directive cost-effectively ([Article 11](#), [Annex III](#));
- To produce and publish River Basin Management Plans (RBMPs) for each RBDm including the designation of heavily modified water bodies, by 2009 ([Article 13](#), [Article 4.3](#));
- To implement water pricing policies that enhance the sustainability of water resources by 2010 ([Article 9](#));
- To make the measures of the programme operational by 2012 ([Article 11](#));
- To implement the programmes of measures and achieve the environmental objectives by 2015 ([Article 4](#))



Look Out!

Member States may not always reach good water status for all water bodies of a river basin district by 2015, for reasons of technical feasibility, disproportionate costs or natural conditions. Under such conditions that will be specifically explained in the RBMPs, the Water Framework Directive offers the possibility to Member States to engage into two further six- year cycles of planning and implementation of measures.

Changing the management process – information, consultation and participation

[Article 14](#) of the Directive specifies that Member States shall encourage the active involvement of all interested parties in the implementation of the Directive and development of river basin management plans. Also, Member States will inform and consult the public, including users, in particular for:

- The timetable and work programme for the production of river basin management plans and the role of consultation at the latest by 2006;
- The overview of the significant water management issues in the river basin at the latest by 2007;
- The draft river basin management plan, at the latest by 2008.

Integration: a key concept underlying the Water Framework Directive

The central concept to the Water Framework Directive is the concept of *integration* that is seen as key to the management of water protection within the river basin district:

- **Integration of environmental objectives**, combining quality, ecological and quantity objectives for protecting highly valuable aquatic ecosystems and ensuring a general good status of other waters;
- **Integration of all water resources**, combining fresh surface water and groundwater bodies, wetlands, coastal water resources **at the river basin scale**;
- **Integration of all water uses, functions and values** into a common policy framework, i.e. investigating water for the environment, water for health and human consumption, water for economic sectors, transport, leisure, water as a social good;
- **Integration of disciplines, analyses and expertise**, combining hydrology, hydraulics, ecology, chemistry, soil sciences, technology engineering and economics to assess current pressures and impacts on water resources and identify measures for achieving the environmental objectives of the Directive in the most cost-effective manner;
- **Integration of water legislation into a common and coherent framework**. The requirements of some old water legislation (e.g. the Fishwater Directive) have been reformulated in the Water Framework Directive to meet modern ecological thinking. After a transitional period, these old Directives will be repealed. Other pieces of legislation (e.g. the Nitrates Directive and the Urban Wastewater Treatment Directive) must be co-ordinated in river basin management plans where they form the basis of the programmes of measures;
- **Integration of all significant management and ecological aspects** relevant to sustainable river basin management including those which are beyond the scope of the Water Framework Directive such as flood protection and flood prevention;
- **Integration of a wide range of measures, including pricing and economic and financial instruments, in a common management approach** for achieving the environmental objectives of the Directive. Programmes of measures are defined in **River Basin Management Plans** developed for each river basin district;
- **Integration of stakeholders and the civil society in decision making**, by promoting transparency and information to the public, and by offering an unique opportunity for involving stakeholders in the development of river basin management plans;
- **Integration of different decision-making levels that influence water resources and water status**, be local, regional or national, for an effective management of all waters;
- **Integration of water management from different Member States**, for river basins shared by several countries, existing and/or future Member States of the European Union.

WHAT IS BEING DONE TO SUPPORT IMPLEMENTATION?

Activities to support the implementation of the Water Framework Directive are under way in both Member States and in countries candidate for accession to the European Union. Examples of activities include consultation of the public, development of national guidance, pilot activities for testing specific elements of the Directive or the overall planning process, discussions on the institutional framework or launching of research programmes dedicated to the Water Framework Directive.

May 2001 – Sweden, Member States, Norway and the European Commission agreed a Common Implementation Strategy

The main objective of this strategy is to provide support to the implementation of the Water Framework Directive by developing coherent and common understanding and guidance on key elements of this Directive. Key principles in this common strategy include sharing information and experiences, developing common methodologies and approaches, involving experts from candidate countries and involving stakeholders from the water community.

In the context of this common implementation strategy, a series of working groups and joint activities have been launched for the development and testing of non-legally binding guidance (see [Annex A](#)). A strategic co-ordination group oversees these working groups and reports directly to the water directors of the European Union and Commission that play the role of overall decision body for the Common Implementation Strategy.

The working group 2.5. Guidance for establishing the intercalibration network and intercalibration exercise

A working group was created for dealing specifically with the issue of the intercalibration process. The main short-term objective of this working group (named shortly: Intercalibration) has been the development of a non-legally binding and practical guidance for the process of intercalibration of the surface water ecological quality assessment systems required by the Water Framework Directive. The members of the working group are environmental officers, technical experts, and researchers from European Union Member States, from a limited number of candidate countries to the European Union and from organisations involved in the standardisation, assessment and reporting of the ecological status of surface waters (European Environment Agency, European Water Topic Center, and CEN).

To ensure an adequate input and feedback during the guidance development phase and to evaluate earlier versions of the guidance document, interaction with other working groups and relevant research projects has been an integral part of the activities (Fig. 2). The Intercalibration working group has organised three workshops, including a joint workshop with REFCOND¹. Representatives from the working groups COAST², IMPRESS³, MONITORING⁴, HMWB⁵, and Pilot River Basins⁶, participated in the workshops. Additionally, expert drafting group meetings were held with the aim to

¹ Working group 2.3 Guidance on classification of inland surface water status and identification of reference conditions

² Working group 2.4 Guidance on the development of typology and classification systems of transitional and coastal waters

³ Working group 2.1 Guidance on the analysis of pressures and impacts

⁴ Working group 2.7 Guidance on monitoring

⁵ Working group 2.2 Guidance on designation of heavily modified bodies of water

⁶ Working group 4.1 Integrated testing of guidelines in pilot river basins

draft and define criteria of selection of types and sites for intercalibration network for rivers, lakes, and coastal & transitional waters).

 **Look out! You can contact the experts involved in the planning and execution of the Intercalibration process**
The list of Intercalibration Working Group members with full contact details can be found in [Annex B](#), if you want to know the status is the intercalibration process in your country.

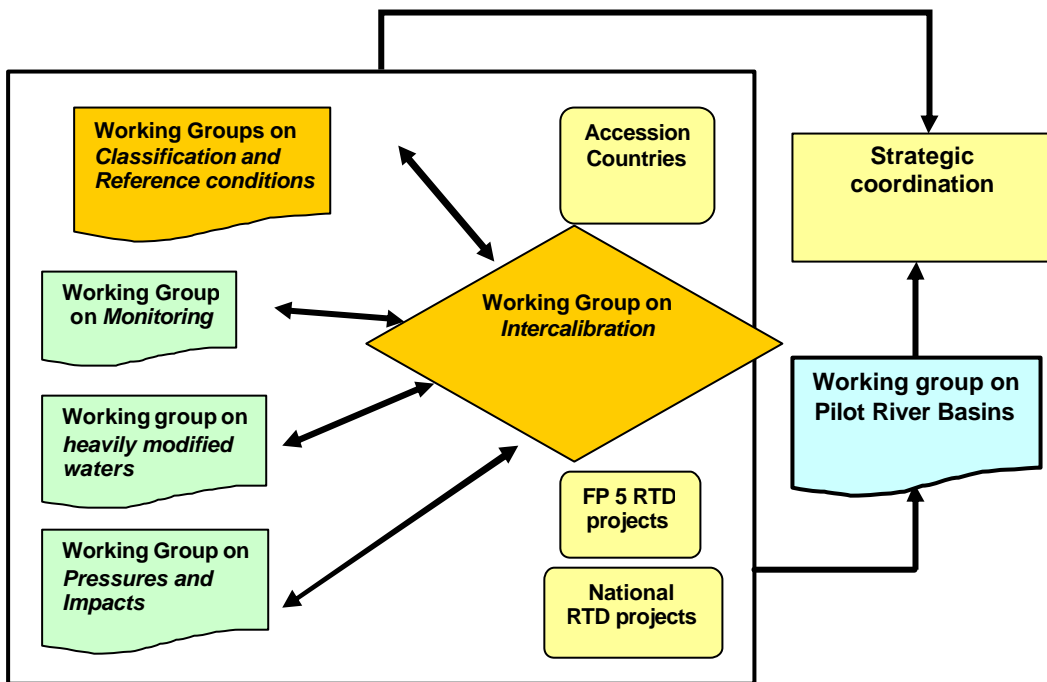


Figure 2 Links between Common Implementation Strategy Working Groups and other research activities, relevant for the information needs of Working Group on Intercalibration.

Developing the guidance document: an interactive process

Within a very short time period, a large number of experts have been involved in the different stages of the development of this Guidance Document. The process has included the following activities:

- **Regular communication through internet and emails** of the 30+ members of the Intercalibration Working Group;
- Organisation of **three workshops** to present and discuss the intermediate draft documents and activities
 - Kick-off meeting with participation of REFCOND, IMPRESS, and HMWB working groups (June 2001, JRC-Ispra, Italy)
 - Jointly with the REFCOND, with participation of COAST working group and WWF representatives (December 2001 – JRC, Ispra, Italy);
 - Workshop for discussing and evaluating the draft Guidance Document, including experts from interested candidate countries (June 2002 – JRC, Ispra, Italy).
- A series of three **expert drafting group meetings** to establish more specific criteria for selection of types and sites for the intercalibration network for rivers, lakes and coastal and transitional waters, and discussion of obstacles and potential solutions of the intercalibration process (March and April 2002 – JRC, Ispra, Italy); you can find the papers produced by the expert drafting groups on CIRCA⁷.
- Interactions with relevant **5th Framework Programme RTD-projects**; participation of their experts in workshops and expert drafting group meetings, and presentations of WFD Intercalibration issues in the meetings of research projects (AQUEM⁸, STAR⁹, FAME¹⁰, CHARM¹¹)
- Regular **interactions with experts from other working groups of the Common Implementation Strategy**, including joint drafting of documents, regular email exchange of documents and participation in relevant workshops of the other working groups (mainly with REFCOND & COAST, IMPRESS, HMWB, Monitoring and Integrated testing of guidance in pilot river basins). In spring 2002, an Ecological Status Cluster was formed of the three working groups closely linked to each others (Intercalibration, REFCOND and COAST).

⁷http://forum.europa.eu.int/Members/irc/env/wfd/library?l=/working_groups/intercalibration/drafts/expert_drafting&vm=detailed&sb=Title

⁸ Development and testing of an integrated assessment system for the ecological quality of streams and rivers throughout Europe using benthic macroinvertebrates

⁹ Standardisation of river classifications: Framework method for calibrating different biological survey results against ecological quality classifications to be developed for the Water Framework Directive

¹⁰ Development, Evaluation and Implementation of Standardised Fish-based Assessment method for the Ecological status of European rivers – A contribution to the Water Framework Directive

¹¹ Characterisation of the Baltic Sea Ecosystem: Dynamics and Function of Coastal Types

Section 2 – Common understanding of the text and terms related to intercalibration requirements

In this section the common understanding and the implications of the relevant parts of the Annex V and Article 21 of the Directive, concerning Intercalibration, and other relevant legal texts¹² are presented and briefly discussed.

Water Framework Directive, Annex V:

1.4. Classification and presentation of ecological status

1.4.1. Comparability of biological monitoring results

Annex V, 1.4.1 only deals with **biological** monitoring results, implying that the intercalibration exercise described below includes only the biological quality elements, not ecological status as a whole.

(i) Member States shall establish monitoring systems for the purpose of estimating the values of the biological quality elements specified for each surface water category or for heavily modified and artificial bodies of surface water.

Monitoring systems should estimate “values” for the category-specific **biological** quality elements (example: aquatic flora, benthos, and fish for rivers). For artificial and heavily modified water bodies biological quality elements to be monitored should be those used in the most applicable category (example: lake quality elements for reservoirs).

In applying the procedure set out below to heavily modified or artificial water bodies, references to ecological status should be construed as references to ecological potential.

“Applying the procedure set out below” implies that **artificial or heavily modified water bodies should be considered in the intercalibration (but not as separate category)**, using maximum ecological potential as reference (see Section 4.3).

Such systems may utilise particular species or groups of species which are representative of the quality element as a whole.

In order to assess which particular species or groups are “representative” for the quality element as a whole one should take into account the definitions for high, good and moderate status for the different quality elements (Annex V, 1.2.1). (Example: benthic invertebrate fauna indicators in rivers must be able to show changes in composition/abundance, the ratio of disturbance sensitive taxa to insensitive taxa, and diversity).

Monitoring systems should be able to detect anthropogenic impact from different kinds of pressures (Example: a saprobic index that is very sensitive to eutrophication pressures could be insensitive to heavy metal pollution).

(ii) In order to ensure comparability of such monitoring systems, the results of the systems operated by each Member State shall be expressed as ecological quality ratios for the purposes of classification of ecological status.

¹² Decision 1999/468/EC, Article 205(2) of the Treaty (see Annex C).

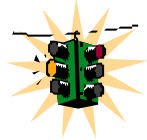
These ratios shall represent the relationship between the values of the biological parameters observed for a given body of surface water and the values for these parameters in the reference conditions applicable to that body. The ratio shall be expressed as a numerical value between zero and one, with high ecological status represented by values close to one and bad ecological status by values close to zero.

The monitoring results for the biological quality elements are expressed as EQRs - ratios derived from observed values and reference values.

Intercalibration of individual parameters is difficult because different Member States may measure different parameters for a given biological quality element. ***The biological quality elements should be the level for intercalibration.***

(iii) Each Member State shall divide the ecological quality ratio scale for their monitoring system for each surface water category into five classes ranging from high to bad ecological status, as defined in Section 1.2, by assigning a numerical value to each of the boundaries between the classes. The value for the boundary between the classes of high and good status, and the value for the boundary between good and moderate status shall be established through the intercalibration exercise described below.

The results of the intercalibration exercise determine the numerical (EQR) values for the high-good and the good-moderate boundaries in each Member State's classification system. Values for the other two class boundaries are established by the Member States themselves.



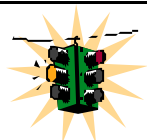
What will be intercalibrated is ***not*** ecological status, but the outcome (as status classes) of the numerical (EQR) values for the biological quality elements in Member State's assessment systems. The ecological status is determined by the lower of the values (high/good/moderate/poor/bad) of the relevant biological and physico-chemical monitoring results for the relevant quality elements¹³.

(iv) The Commission shall facilitate this intercalibration exercise in order to ensure that these class boundaries are established consistent with the normative definitions in Section 1.2 and are comparable between Member States.

(v) As part of this exercise the Commission shall facilitate an exchange of information between Members States leading to the identification of a range of sites in each ecoregion in the Community; these sites will form an intercalibration network.

As a first step in this information exchange it should be decided **what information (including biological and other data) is needed to identify intercalibration sites.**

The network shall consist of sites selected from a range of surface water body types present within each ecoregion.



'Sites' for the intercalibration network refer to whole water bodies, because the water body is the unit of ecological status classification (i.e. each water body has only one classification status)¹⁴.

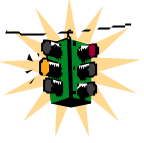
¹³ WFD Annex V, Article 1.4.2 (i)

¹⁴ See "Horizontal guidance on the application of the term "water body" in the context of the Water Framework Directive".

Not all types distinguished by member States (and shared by other Member States) need to be included in the intercalibration network, but a subset of common types will be selected. For intercalibration purposes, common types between Member States sharing same ecoregion(s) need to be agreed.

Criteria and a process for the selection of water body types for the intercalibration network are presented in Section 4.2.

For each surface water body type selected, the network shall consist of at least two sites corresponding to the boundary between the normative definitions of high and good status, and at least two sites corresponding to the boundary between the normative definitions of good and moderate status.

	<p>In the opinion of the Intercalibration working group, the sites included in the intercalibration network should be selected by the Member States, representing the interpretations by the respective Member States of the normative class boundary definitions. Harmonised class boundaries should be the outcome of the intercalibration exercise – not the starting point</p>
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More than 2 sites per boundary can be selected for each surface water type included in the intercalibration network (number of sites recommended is presented in Section 4.7).

The normative definitions of the different quality classes are formulated in terms of the biological quality elements; the values of these should not deviate too much from reference conditions (i.e. the least "*slight deviations*" within the good status range, and the least "*moderate deviations*" within the moderate status range).

The information required for the selection of intercalibration sites is presented in Section 4.6.

The sites shall be selected by expert judgement based on joint inspections and all other available information.

Regional expert groups will evaluate the information from the sites proposed by the Member States and make recommendations for the Commission.

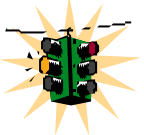
The process to carry out the selection of intercalibration sites is presented in Section 4.1 of this guidance.

(vi) Each Member State monitoring system shall be applied to those sites in the intercalibration network which are both in the ecoregion and of a surface water body type to which the system will be applied pursuant to the requirements of this Directive.

For each Member State monitoring system it must be determined to which ecoregion(s) and water body type(s) the system will be applied.

If the ecoregions presented in Annex XI (as a part the System-A typology) are used as the sole basis for intercalibration there will be limited possibilities for comparison of monitoring and assessment systems of inland waters for many Member States (example: ES-P, IRL-GB), or even no possibility at all (I, GR).

The directive does not prescribe the use of the Annex XI ecoregions. The intercalibration would benefit from using larger ecoregions, as long as the same surface water body types are found within those regions. This would better enable intercalibration between larger numbers of Member States.

	<p>“Ecoregions” for intercalibration are not necessarily the ecoregions for System A typology presented in Annex XI, but should be as large as possible to enable intercalibration between a maximum number of Member States. Preliminary proposals for intercalibration ecoregions are presented in Section 4.5 of this guidance document.</p>
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The results of this application shall be used to set the numerical values for the relevant class boundaries in each Member State monitoring system.

The EQR values of the boundaries will be established through the intercalibration exercise.

Member States define the numerical values for the relevant class boundaries using their monitoring systems. Intercalibration compares the outcome (as status classes) of the numerical values “measured” according to the methodology adopted by Member States.

In order to allow comparison of Member States’ classification results from the same intercalibration sites, information of data and assessment methods will need to be brought together.

Guidance how to translate the results of the intercalibration exercise into numerical values for the class boundaries will be developed in the next phase of the Common Implementation Strategy when there will be metadata (information about the availability of data) available from the potential intercalibration sites (i.e. during 2003; see section 5.8).

(vii) Within three years of the date of entry into force of the Directive, the Commission shall prepare a draft register of sites to form the intercalibration network which may be adapted in accordance with the procedures laid down in Article 21. The final register of sites shall be established within four years of the date of entry into force of the Directive and shall be published by the Commission.

The procedures laid down in Article 21¹⁵ concern the regulatory committee, referring to Decision 1999/468/EC¹⁶. The regulatory committee consists of representatives of the Member States and is chaired by the Commission.

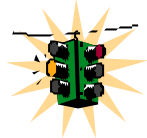
The Commission shall submit to the committee a draft of the measures to be taken (in this case the draft register of intercalibration sites together with a plan how to finalise it). The committee shall deliver its opinion on the draft, by qualified majority (Article 205(2) of the Treaty¹⁷). The Commission shall adopt the measures if they are in

¹⁵ WFD art. 21: Regulatory committee.(1) A committee, hereinafter referred to as “the Committee”, shall assist the Commission; (2) Where reference is made to this Article, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof. The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three month; (3) The Committee shall adopt its rules of procedure.

¹⁶ See Annex C of this document.

¹⁷ See Annex C of this document.

accordance with the opinion of the committee. If this is not the case, the Commission shall submit to the Council a proposal relating to the measures to be taken and inform the European Parliament.



This procedure should allow for the amendment of the draft register of the intercalibration network after it has been proposed by the Commission (December 2003 at the latest) and before the final register will be published (December 2004).

(viii) The Commission and Member States shall complete the intercalibration exercise within 18 months of the date on which the finalised register is published.

(ix) The results of the intercalibration exercise and the values established for the Member State monitoring system classifications shall be published by the Commission within six months of the completion of the intercalibration exercise.

Section 3 – Synthesis of the intercalibration process: problems and possible solution

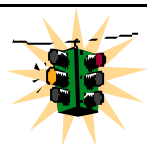
In this section a synthesis of the intercalibration process is presented, key steps of the critical path and the bottlenecks in the fulfilment of the requirements of the Directive are presented and discussed. The potential implications of a limited intercalibration and the possible short and long term solutions are also presented.

3.1. Formal requirements and the timetable of intercalibration

The Directive requires that the boundaries between the ecological quality classes high - good and good - moderate will be established through an intercalibration exercise (Annex V, 1.4.1, iii). An intercalibration network, consisting of selected sites, will be established representing Member States' interpretations of the normative definitions of surface water status (defined in Annex V, section 1.2) in relation to reference conditions.

The purpose of the Intercalibration exercise is to ensure comparable ecological quality assessment systems and harmonised ecological quality criteria for surface waters in the Member States. This ensures a harmonised approach to define one of the main environmental objectives of the WFD, the “good ecological status”, by establishing:

- Agreed ecological quality criteria for good quality sites, setting the targets for protection and restoration
- Agreed numerical Ecological Quality Ratio (EQR) values for two quality class boundaries (high/good and good/moderate)



This means that the normative definitions for the high and good surface water quality need to be interpreted equal regardless differences in ecological quality assessment systems between Member States (i.e. good ecological quality should have the same meaning all over EU).

Intercalibration is carried out by the Member States. The role of the Commission is to facilitate the information exchange between the Member States.

An intercalibration exercise shall be carried out in 2005 and 2006 between the Member States to ensure the comparability of the biological monitoring results. Prior to this an intercalibration network should be established by the end of 2004 (Fig. 3). The draft register of the Intercalibration network, published by the Commission may be adapted in accordance with the procedures laid down in Article 21 of the Directive.

The intercalibration network will be established for a limited number of water body types with two or more sites corresponding to both boundaries between quality classes *High-Good* and *Good-Moderate* according to each Member States' classification. The selection of water body types and intercalibration sites needs to be carried out using expert judgement based on joint inspections and all available information. In the intercalibration exercise, Member State's ecological quality assessment systems are then applied to classify these sites in the

ecoregions where their classification systems are applicable. The results are used to set the boundary ‘Ecological Quality Ratio’ (EQR) values of the classification systems and published by the Commission.

The Directive requires the following timetable for the intercalibration:

- establishment of draft register of the intercalibration network – December 2003
- establishment of final register of intercalibration network – December 2004
- Intercalibration exercise completed – June 2006
- Results of intercalibration exercise published by Commission – December 2006

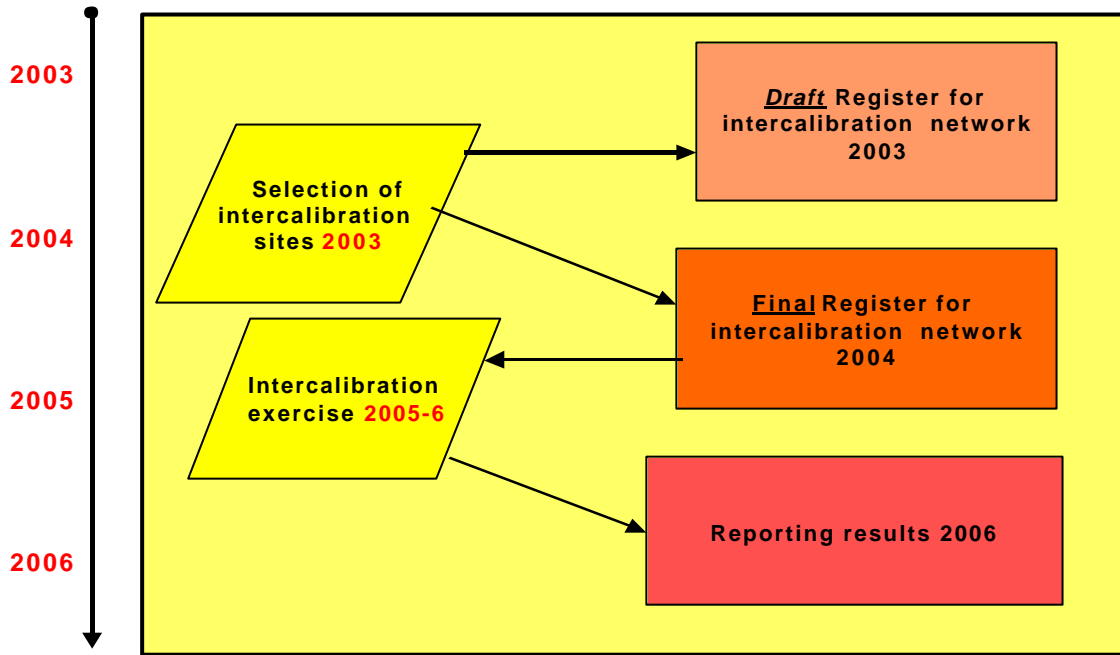


Figure 3. Task phases and time-table of the formal Intercalibration exercise.

3.2. Obstacles in the timetable of the intercalibration process

In the fulfillment of the formal requirements of the intercalibration exercise, as described in Annex V of the Directive, certain difficulties are foreseen. The main reason is that the intercalibration timetable does not completely match with the implementation timetable in the Member States. As a consequence, crucial information for the intercalibration will only be available during the progress in implementation (Table 1).

Table 1. Comparison of the Member States’ implementation timetable and the intercalibration timetable, as required by Annex V of the Directive.

Year	MS implementation timetable	Intercalibration timetable
2003		Draft register of the Intercalibration network
2004	Analysis of characteristics (typology and reference conditions) and pressures & impacts	Final register of the Intercalibration network

2005		Intercalibration exercise
2006	Monitoring programs operational	Intercalibration exercise completed: harmonized class boundaries

The major obstacles for the intercalibration process due to the differences in timetables are presented below.

3.3. Problem of typology incompatibility

It will be difficult to select intercalibration types that are compliant with water body types differentiated by the Member States, because:

- Different Member States may use different typology systems.
- Member States do not need to differentiate surface water body types (needed for the ‘analysis of the characteristics’ of each River Basin District) before December 2004¹⁸ (cf. Table 1).
- Before that (already in 2003) the sites for the draft register of the intercalibration network should be already selected and the draft register submitted to the Art. 21 Committee for adoption. In absence of a common typology, this selection can only be made on an *ad hoc* basis and using expert judgement.

Implications:

- Water body types selected for the intercalibration network on an *ad hoc* basis in 2003 may not be compliant with water body types that will be differentiated by the Member States when their typologies are completed in 2004
- It will be difficult to select and agree upon intercalibration sites representing class boundaries, since type-specific reference conditions are needed for classification of the ecological quality.

Potential solutions on a short term basis:

- Member States should start to carry out implementation of typology and reference conditions as soon as possible.
- Member States should agree on compatible typology systems (still allowing regional refinements) and, if possible, a common basis for reference conditions within (eco)regional intercalibration groups as soon as possible or latest in early 2003.
- If the solutions above are not practically possible, the *ad hoc* selection of common types using expert judgement in 2003 should be designed so that it would allow further division into ecologically relevant subtypes that will be later differentiated by Member States.

¹⁸ WFD, Art. 5, Annex II, 1.1. (i-vi)

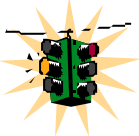
3.4. Problem of data availability

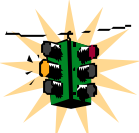
The selection of sites for the intercalibration network by the Member States requires that they have adequate and reliable information on all relevant pressures and impacts. Furthermore, reference conditions must be specified for the intercalibration types. At present it is foreseen that this information will only partially be available at the time when the sites have to be selected (in 2003 and 2004).

- At present **no** Member States have monitoring systems that are compliant with the requirements of WFD. Data from the on-going monitoring systems are in many cases incomplete or not applicable for the intercalibration.
- There is practically no possibility to collect new data to be available for the site selection in 2003 and 2004. Thus the site selection (i.e. the setting of the ecological quality borders *high-good* and *good-moderate*) can only be based on data presently available.
- The monitoring systems of the Member States do not need be operational before December 2006¹⁹. By that time the intercalibration exercise should be already completed and the results should be published (Table 1)

Implications:

- Site selection can only be based on limited data, not covering all biological quality elements, meaning that the intercalibration network will reflect impacts of pressures on some quality elements only²⁰.
- Establishment of the class boundaries (*high-good* and *good-moderate*) will be based mostly on expert judgement.
- Limited data availability will limit the number of water body types that can be included in the intercalibration network.
- Once new monitoring data, including other biological quality elements, will be available (i.e. after 2006), the intercalibration network may no longer adequately represent the ecological quality class boundaries (i.e. *high-good*, and *good-moderate*) presumed during the site selection in 2003 and 2004.

	The WFD foresees a <u>single intercalibration exercise</u> in 2005 and 2006. It is inevitable that this exercise will be based on results from monitoring systems that are still under development, with limited data available and practically no possibility to collect additional data.
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	The objectives of the intercalibration exercise – agreement on class boundaries and harmonised classification systems – can be only partially met in the <u>single intercalibration exercise</u> that is required by the WFD
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¹⁹ WFD, Art. 8, Annex V, 1.3.

²⁰ For example, the intercalibration of rivers would mainly have to use data on macroinvertebrates, because for the other quality elements there is not sufficient data available at this stage.

Potential solutions on a short term basis:

- The site selection in 2003 and 2004 should be targeted for water body types where most data is available, recognising that the intercalibration network established will not reflect the impacts of all pressures, and all biological quality elements.
- Member States should voluntarily start WFD compatible monitoring programs as soon as possible, in order to obtain as much as possible of the data required to carry out the intercalibration exercise.
- The intercalibration exercise in 2005 and 2006 could be limited to comparison of classification methods on sites where most data concerning selected pressures would be available.

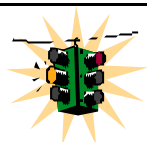
Table 2. Key steps and bottlenecks of the INTERCALIBRATION process.

Red indicate WFD requirements, blue indicate bottlenecks in the planning and green indicate links to other WG:s.

Key activities	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Register of Intercalibration network													
> Site selection on available data													
> Article 21 Committee evaluates and adopts Register													
> Set preliminary class-boundaries (establish reference conditions) with available data on biological quality elements [WGs REFCOND & COAST]													
> Choose typology system, water types for each ecoregion [WG REFCOND & COAST]]													
> Monitoring programmes operational													
> Establish criteria for high and good ecological status [WG IMPRESS, REFCOND, COAST]]													
> Select potential high and good status sites [WG REFCOND, COAST] depending on type-specific pressures and impacts [WG REFCOND]													
> Choose quality elements and method(s) for establishing reference conditions and ecological quality class boundaries [WG Monitoring, WG REFCOND]													
> Establish type- or site-specific RC and calculate EQR-values for all relevant quality elements [WG REFCOND& Monitoring?]													
> Establish ecological quality class boundaries [WG Intercal.]													
Intercalibration Exercise													
> optional: refining the status of intercalibration sites (revision of the Register) when new monitoring data becomes available													
> optional: adjusting EQR values													
> Potential revision of ecological quality classifications of all surface waters due to review and update of analyses mentioned in Article 5.1													

3.5. Problems of 'limited' intercalibration

Member States select intercalibration sites using information on pressures and the impact of these pressures on the biological quality elements (compared with reference conditions). Intercalibration sites represent their judgement of what is a "slight" or a "moderate" impact.



There is no guarantee that different Member States will have the same views on how the normative definitions of the quality class boundaries should be interpreted. Differences in interpretation will be reflected in the draft intercalibration network.

Member States may - or may not – have monitoring data on biological quality elements sensitive to the pressures identified as the most significant for the water bodies proposed for the intercalibration network.

Since EQR values will be established based on biological quality data (using relevant quality elements), sites where there is no biological data collected and available before 2005, cannot be used in the intercalibration exercise (Fig. 4).

The prerequisite to use any site in the intercalibration exercise requires that there will be **biological monitoring data** (of relevant quality elements) available latest in 2005.

An intercalibration network including only sites impacted by the most widespread pressures (such as eutrophication in lakes and coastal waters), as proposed in Section 4.4., p. 36, would imply that:

- Only those parts of the classification systems targeted to detect impacts of such pressures on the selected quality elements would be intercalibrated (Fig. 4).
- Agreed ecological quality criteria for good quality sites, setting the targets for protection and restoration of water bodies would be set only for most widespread pressures, while impacts of other pressures would not be considered.
- In 2006, there will be no verified and comparable targets for 'good ecological status' as a whole

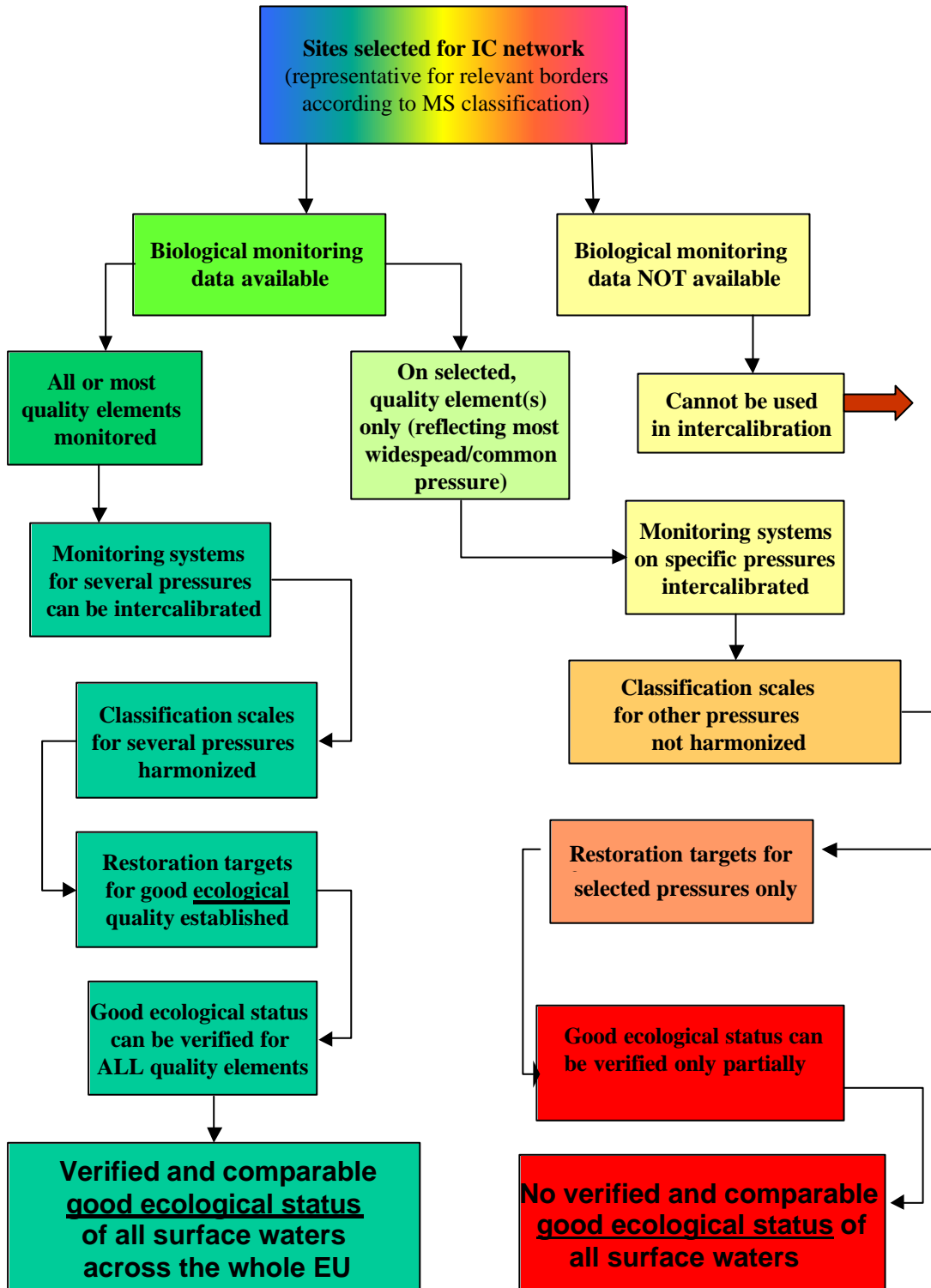
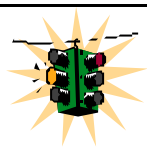


Figure 4. Flow chart of the benefits of complete intercalibration (not possible in present implementation time schedule) vs. risks of limited intercalibration that will be carried out during 2005 and 2006.

3.6. Long-term strategy to overcome the problems of intercalibration

It is anticipated that a voluntary commitment of the Member States could improve the outcome of the intercalibration exercise in 2003-2006. However, due to practical problems in establishing WFD compatible monitoring systems in time it is anticipated that the objectives of the intercalibration exercise – agreement on class boundaries and harmonised classification systems – can be only partially met in the single intercalibration exercise that is required by the WFD. In order to establish reliable and comparable ecological quality class boundaries, a review mechanism for the intercalibration network at a time when more data with better quality and compatible with WFD requirements will be available (i.e. after 2006) is strongly recommended. In principle, a revision of the intercalibration network is implicit due to the timetable for revision of the analysis of river basin district characterisation – including typology and reference conditions – provided for in Article 5 of the WFD.



A long-term strategy allowing a mechanism for the revision of the intercalibration network after 2006 is strongly recommended by the Intercalibration working group. The practical implications²¹ and the legal possibilities²² for such revisions should be clarified as soon as possible in the continuation of the Common Implementation Strategy.

The establishment of a long-term strategy and a review mechanism for the intercalibration register in specific guidelines would allow:

- Assessment of the possible changes in the quality of the intercalibration sites
- Intercalibration and harmonisation of new assessment methods (i.e. development of new indicators, new assessment tools, approval of new standards, etc.)
- Addition of new sites impacted by other significant pressures (which were not represented in the intercalibration network in 2004)
- Addition of further water body types in the intercalibration network as a consequence of verification of the typology systems in Member States when new biological monitoring data is available.
- Intercalibration and harmonisation of the monitoring and classification systems of the new Member States.

²¹ Taking into account the consequences for preparing programmes of measures, river basin management plans and establishing classification systems

²² Taking into account the possibilities given in WFD Art. 19, 20 and 21

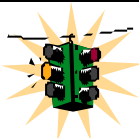
Section 4 – Guidance for the establishment of the intercalibration network

This section provides practical guidance for the establishment of the intercalibration network:

- 1) How to carry out site selection process for the intercalibration network in practise
- 2) Criteria for selection of types for the intercalibration network
- 3) Criteria for selection of sites for the intercalibration network

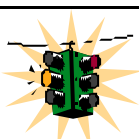
The guidance is based on the common understanding of the Directive’s requirements concerning intercalibration (*Section 2*) and the Synthesis of the intercalibration process (*Section 3*). It is to a large extent the result of the work of three temporary expert drafting groups that were established by the Working Group on Intercalibration to address issues specific to the major categories of water bodies – rivers, lakes, and coastal and transitional waters.

The WFD intercalibration will harmonise results of the biological assessment systems implemented by the Member States. All obligatory quality elements and all relevant pressures should be taken into account to completely accomplish this task.



The intercalibration working group concludes that **the intercalibration has to be limited** to water body types and quality elements where sufficient data will be available in time.

The intercalibration working group concludes that the **Member States select intercalibration sites** using information on selected pressures and the impact of these pressures on the biological quality elements (compared with reference conditions).



Thus **the sites of the Intercalibration network represent the respective Member State’s interpretations of the normative definitions of Annex V (1.2.)** including their judgement what is a “slight” or a “moderate” impact.

4.1. Procedure for the establishment of the intercalibration network

The selection of intercalibration sites for the intercalibration network needs to be carried out in two steps.

1. First, selection of the surface water body types for each of the surface water categories (rivers, lakes, transitional and coastal waters), and possibly the artificial and heavily modified waters in each ecoregion, which will be included in the intercalibration network.
2. Secondly, within these types a minimum number of intercalibration sites have to be selected by the Member States following the requirements described in the Annex V of

the WFD (Fig. 5). The intercalibration network must consist of sites selected from a range of surface water body types present within each ecoregion (WFD Annex V).

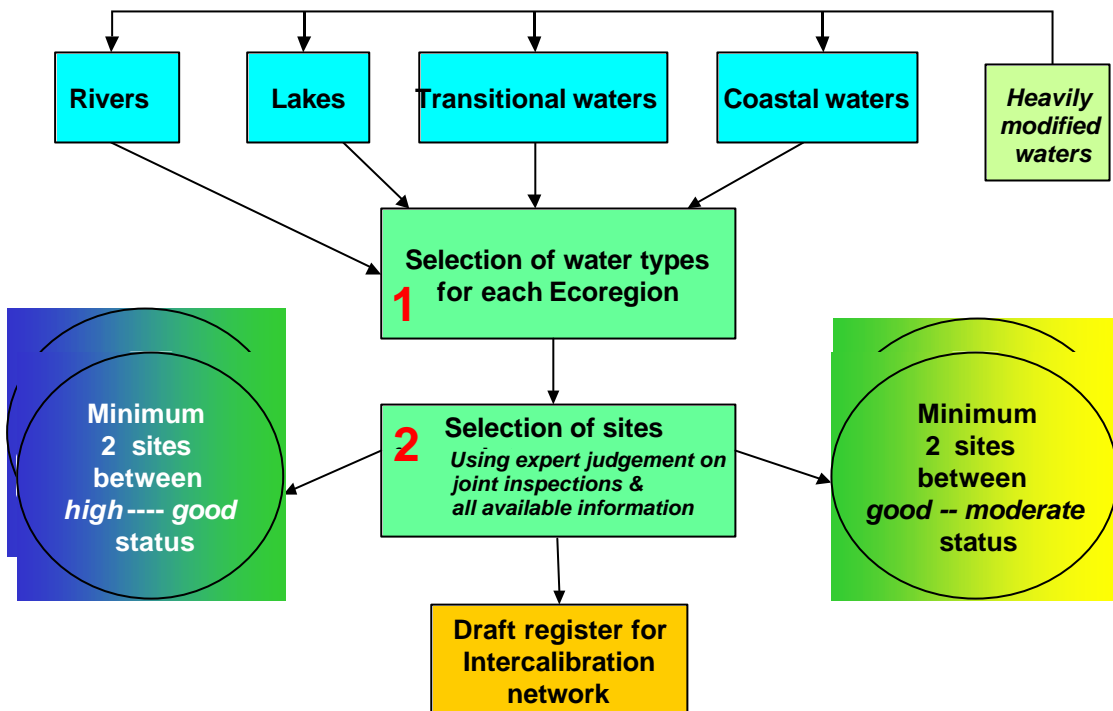


Figure 5. Selection of intercalibration sites for the intercalibration network.

	<p>Intercalibration is carried out by the Member States. The role of the Commission is to facilitate the information exchange between the Member States.</p>
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The technical work of the Commission is carried out by the **European Centre of Ecological Water Quality & Intercalibration – EEWAI** (hosted by EC-JRC) which is the organisation responsible for facilitating the intercalibration exercise and organising the work of the expert groups. The Ecological Status Cluster will co-ordinate the work of the expert groups.

The following is a stepwise description of the proposed procedure for the site selection for the intercalibration network. Flowcharts of the process are presented in Figure 6a and 6b.

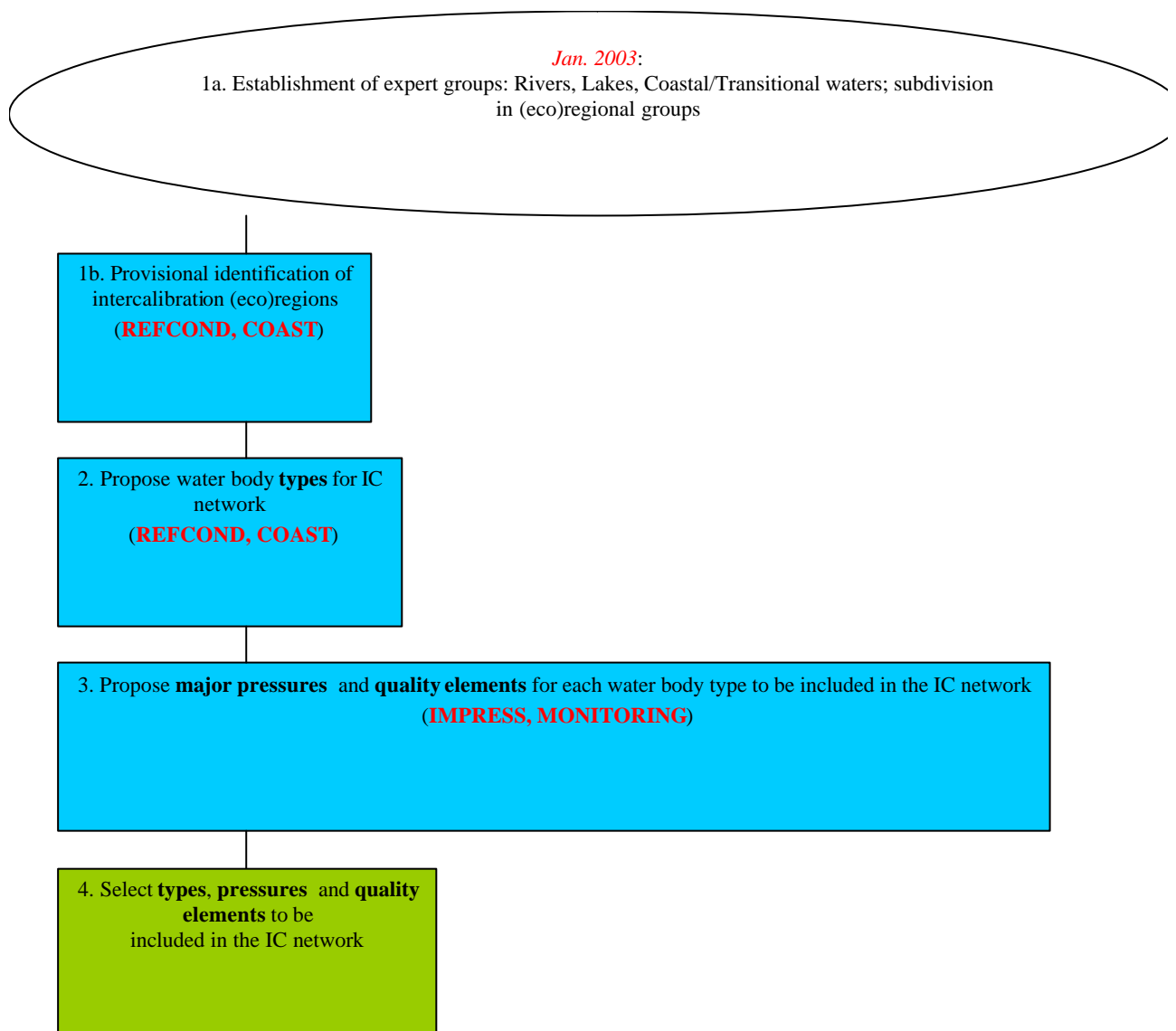


Figure 6a. Flow chart of the proposed process for the selection of types, pressures, and quality elements for the intercalibration network in 2003. Steps where guidance is required from other WFD CIS working groups are indicated. The colours of the boxes indicate the actors that have to carry out the steps: White – Ecological Status Cluster, Blue – expert groups, green – Intercalibration working group.

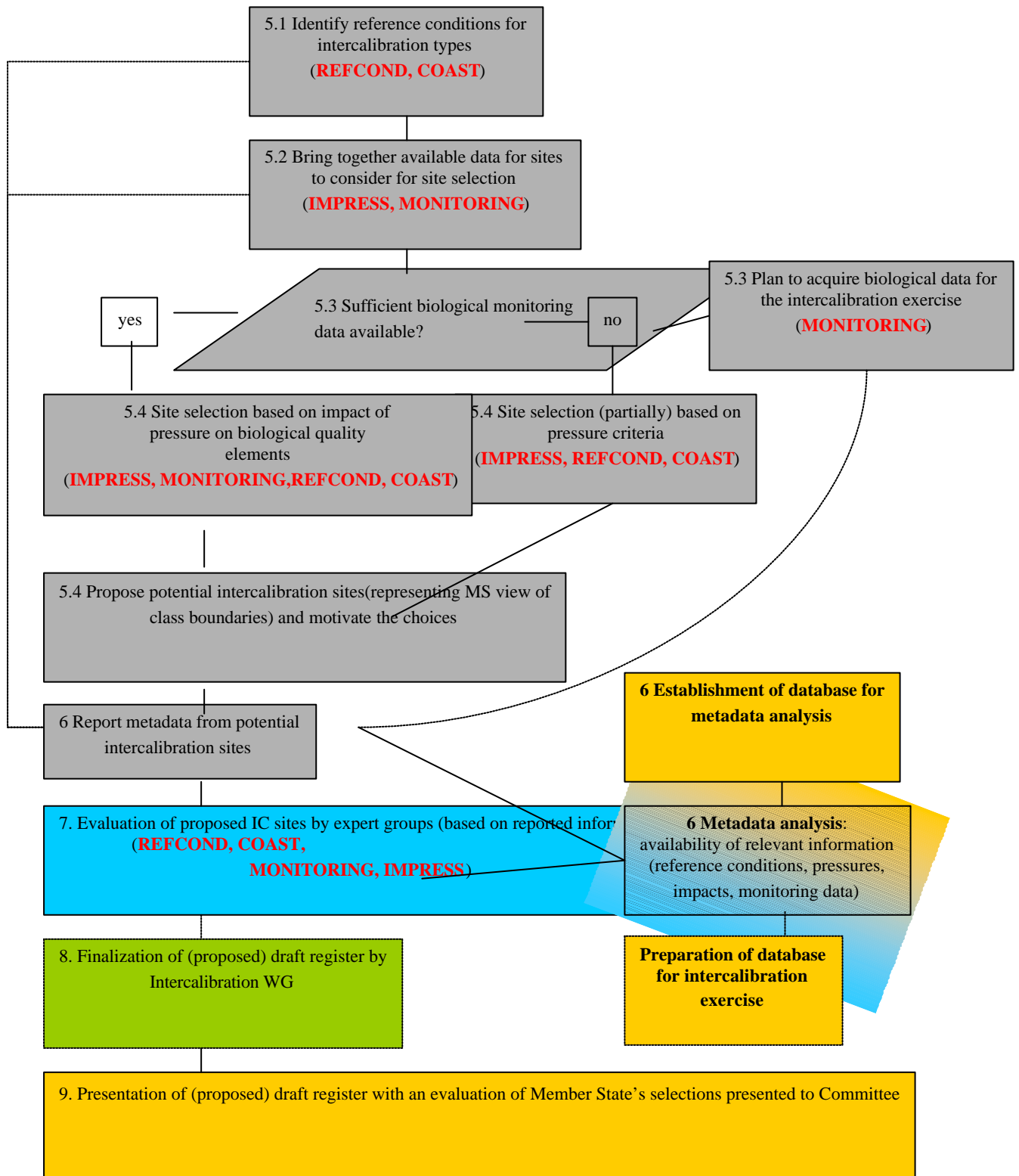


Figure 6b. Flow chart of the proposed process for the selection of sites for the draft intercalibration register. Steps where guidance compiled by other WFD CIS working groups is needed are indicated. The colours of the boxes indicate the actors that have to carry out the steps: Grey - Member States, blue – expert groups, green – Intercalibration working group, yellow – Commission

1. Establishment of the Expert groups

- Expert groups will be established for all main water body categories (rivers, lakes, and transitional and coastal waters).
- The experts are proposed and selected by the Member States. Their work will be co-ordinated through the Ecological Status Cluster.
- Each Member State should be represented in the expert groups relevant for their surface waters.
- Expert groups can be subdivided into (eco)regional groups, or further into geographical intercalibration groups (*section 4.5.*) when necessary.
- A platform for the communication within/between the expert groups (information exchange, meetings, www-page, etc.) will be organised by the Commission.

2. Proposal of water body types

- The expert groups will propose the **water body types** for each surface water category and (eco)region included in the intercalibration network, taking into account the output of working groups REFCOND and COAST. Preliminary proposals of common intercalibration types for each surface water category have been prepared by the expert drafting groups²³.

3. Proposal of pressures and biological quality elements

- For each selected intercalibration type, the expert groups need to agree on the pressures and the biological quality elements, where the intercalibration exercise should focus on, taking into account guidance from the IMPRESS (2.1.) and MONITORING (2.7.) working groups. Preliminary proposals for the focus and information requirements for the site selection have been prepared by the expert drafting groups²²

4. Selection of types, pressures, and quality elements for the intercalibration network

- The proposals of the expert groups will be discussed and finalised by the Intercalibration working group

5. Selection of sites for the draft intercalibration register

- Each Member State will select sites for the draft intercalibration register
- The sites selected should represent high-good and good-moderate class boundaries according to each Member State's interpretation of the

²³drafting expert group reports are available on CIRCA:
http://forum.europa.eu.int/Members/irc/env/wfd/library?l=/working_groups/intercalibration/drafts/expert_drafting&vm=detail&sb=Title

normative definitions, taking into account the guidance documents of REFCOND and COAST.

The selection process should follow these steps:

5.1 Member States identify which types in the Member State's typology system correspond to the intercalibration types relevant for the Member State, and identify the reference conditions for those types

5.2 Bring together all available information necessary for the site selection (pressures, impacts, biological data for the sites that will be considered for the sites selection - ranging from high to moderate status).

5.3 If there is not sufficient biological data, site selection should be partially based on pressure criteria, and the Member State should plan to acquire biological data to be available for the intercalibration exercise in 2005-6.

5.4 Based on the available information, Member States select sites representing the high-good and good-moderate boundary, according to their interpretation of the normative definitions specified in Annex V (1.2.) of the WFD, motivating their choice.

6. Metadata analysis

- The Commission will set up a database holding metadata (information about the availability of data) for all intercalibration sites as selected by the Member States.
- Member States will provide metadata on typology, reference conditions and biological and physico-chemical monitoring results (step 5.1-5.3 above). If essential information is lacking at the time of the site selection, they should indicate if, when and in what form the data will become available
- Additionally, information should be provided on the criteria for classification of the sites (step 5.4 above). This information is necessary for the evaluation of the choices of the Member States by the expert groups in the next step.
- The metadata analysis will be the basis for the compilation of the draft register for the intercalibration network providing an overview of the information available for each intercalibration site.
- The metadata analysis will be the basis for a realistic planning for the intercalibration exercise and for the preparation of the database for this purpose.

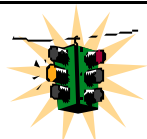
7. Evaluation of the proposed intercalibration sites by expert groups

- The Commission will compile the results of the metadata analysis and make them available to the expert groups.

- The expert groups evaluate the selection by the Member States and point out possible inconsistencies (including differences in Member State's interpretations of the normative definitions).
- The expert groups review the metadata and propose what data should be collected / made available for the intercalibration exercise – allowing Member States to start collecting data which is still not available.

8. Finalisation of the draft register

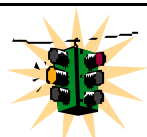
- The evaluation of the different expert groups of the proposed selections of the Member States will be presented, discussed and approved by the Intercalibration working group.
- The draft register of the intercalibration network will be discussed in a joint workshop of Member State representatives (Intercalibration WG) and the Commission, to evaluate consistency with the normative definitions of the class boundaries and comparability between Member States²⁴. Where possible, proposals are made how inconsistencies should be resolved.
- The draft register will be the list of sites selected by the Member States, together with the approved summary of the metadata analysis including information of the criteria for the quality classification of those sites.



The sites selected for the draft intercalibration register represent high-good and good-moderate class boundaries according to each Member State's interpretation of the normative definitions in the Annex V (1.2.).

9. Presentation of the draft register to the Article 21 Committee

- The Commission will finalise the draft register of the Intercalibration network, and submit it to the Article 21 Committee before 22 December, 2003.
- Together with the draft register, the Commission will submit the results of the evaluation made in step 8.



The procedure for revising the draft intercalibration register will depend on the decisions of the Article 21 Committee

10. Revision of the draft intercalibration register

- If a revision of the draft intercalibration is decided, **Member States should reconsider and possibly expand their selection** (based on the decisions of the Article 21 Committee)

²⁴ WFD Annex V, 1.4.1 (iv)

- If new sites are selected by the Member States they should be included in the metadata analysis
- For the final register, it is recommended to follow the same procedure should be followed as for the draft intercalibration register (see steps 7-9 above):
 - Evaluation of the proposed intercalibration sites by expert groups
 - Finalisation of the (proposed) register
 - Presentation of the (proposed) register to the Article 21 Committee
 - Approval of the final intercalibration register by the Article 21 Committee

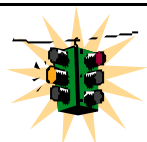
Table 3. Summary and proposed timetable of the site selection for the intercalibration network in 2003 and 2004.

month	Actions		Actors
Jan-03	Establishment of expert groups (for rivers, lakes, transitional and coastal waters); subdivision in (eco)regional groups		Member States, Commission
Feb-Mar-03	Selection of surface water body types. Selection of pressures and biological quality elements.		Expert groups, Intercalibration working group.
Apr-Jun-03	Selection of sites for the draft intercalibration register. Delivery of metadata to the Commission.		Member States
Apr-Oct-03	Metadata evaluation, possible checking of sites, preliminary draft register.		Expert groups and Commission .
Oct-03	Workshop	Approval of draft register	Intercalibration working group, Expert groups, Commission
Nov-03	Compilation of the draft register		Commission
Dec-03	Draft register submitted to the Art. 21 Committee		Commission
Jan-Jun-04	Submission of new information, if possible & available		Member States
Jan-Sep-04	Revision of the draft register, if possible		Expert groups
Sep-Nov-04	Compilation of the final register		Commission
Nov-Dec-04	Adaptation and publication of the final register		Committee

4.2. Selection of water body types for the intercalibration network

The intercalibration network must consist of sites selected from a range of surface water body types present within each ecoregion²⁵.

²⁵ WFD Annex V, I.4.1(v)



Different Member States will not always use the same typology for the characterisation of water bodies²⁶. For intercalibration it is necessary to agree on common types between countries of the same ecoregion.

The following points should be considered in the selection of *typology system(s) for intercalibration*:

- Guidance for characterisation of the surface water types is prepared by REFCOND and COAST working groups. Based on this guidance, Member States may decide to implement a common typology framework throughout Europe or within certain (eco)regions, for certain water body categories. In these cases the intercalibration types should fit in this common typology framework.
- For water body categories and/or (eco)regions where no common typology will be used in the Member States implementation, it will still be necessary to agree on a common typological framework. In the absence of any other common classification system, the selection of types for the intercalibration network could be based on the factors of System A.

The most important requirements for the selected intercalibration types are:

- **common** (least between 2 or more Member States, and found in sufficiently large geographical areas (or ecoregions) to enable comparison of different (national) assessment systems, and all ecoregions should be covered);
 - **sensitive to and impacted by different pressures** (e.g., organic pollution, physical alterations, acidification, eutrophication; habitat degradation, discharge or exposure to toxic substances);
 - allow Member States to identify **reference conditions** at the time of the site selection;
 - They should have **potential intercalibration sites** corresponding to the boundary between high/good and good/moderate available, but accepting that in some ecoregions/types there might be only sites representative for the moderate/ good boundary.
- During the process of type selection, the experts should have this information from their Member States in order to be evaluate the potential types to be selected.

4.3. Artificial and heavily modified water bodies

In the common understanding ([Section 2](#)) it is concluded that **artificial or heavily modified water bodies should be considered** in the intercalibration, but **not as a separate category**.

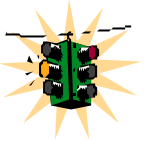
Some artificial or heavily modified water bodies could be considered to be included in the intercalibration network, if they fit in one of the **natural water body types** selected for the intercalibration network.

Artificial and heavily modified water bodies that are not comparable with any natural water bodies should only be included in the intercalibration network, if they are **dominant within a**

²⁶as required in WFD Art. 5

water category in one or more Member States; in that case they should be treated as one or several separate water body types.

Final designation of heavily modified water bodies and definition of maximum ecological potential will be established in 2009.

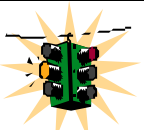
	Heavily modified water bodies, which are provisionally identified in 2003 (i.e. water bodies that are at risk of failing ‘good’ status due to physical modification), can only be included in the intercalibration network, if they fulfil the same selection criteria as natural water bodies. This needs to be evaluated by the expert groups during the selection process (Section 4.1.)
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4.4. Pressures

The intercalibration has to deal with pressures separately because of the different ecological impact of different pressures, and because different indicators or assessment methods are used to assess different impacts.

For each selected intercalibration type it should be agreed which pressure(s) to focus on. The working group on intercalibration recommends that these should be the pressures that are most widespread in Europe.

The preliminary recommendation²⁷ is to focus the lake intercalibration on eutrophication and acidification, the river intercalibration on organic pollution and stream modification, as well as acidification and nutrient pollution for some types only, and intercalibration of coastal and transitional waters on eutrophication and habitat degradation (Table 4).

	For practical reasons the intercalibration has to focus on specific pressures. However, pressures hardly ever come alone, and it will be difficult to find sites, which are impacted only by one pressure.
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Eventually, if a revision of the intercalibration exercise will be possible, the other significant pressures could be included, in order to come to a harmonised classification of **good ecological status**, rather than harmonised indicators for specific pressures.

Table 4. Preliminary recommendation of the pressures for different surface water categories that should be in focus in the selection of the intercalibration network. Further specification should be considered on the level of selected types for each surface water category.

Surface water category	Pressures
Lakes	Eutrophication, Acidification

²⁷ based on drafting expert group reports available on CIRCA:
http://forum.europa.eu.int/Members/irc/env/wfd/library?l=/working_groups/intercalibration/drafts/expert_drafting&vm=detailed&sb=Title

River	Organic pollution, stream modification, acidification (selected types only), nutrient pollution (selected types only)
Coastal and transitional waters	Eutrophication, habitat degradation

4.5. Geographical intercalibration groups

The intercalibration network must be confined to “ecoregions”²⁸. “Ecoregions” can either be interpreted as those specified in Annex XI of the Directive (the Illies ecoregions for lakes and rivers, and much wider regions for coastal and transitional waters), or can be defined in a wider sense.

It is recommended that for rivers and lakes the geographical intercalibration groups of Member States should be larger than proposed by Illies ecoregional division, consisting of at least two or more countries sharing a similar climate.


Groups of Member States that share same water body types in different sub-regions or ecoregions should carry out intercalibration using the same intercalibration sites.

Some Member States will have to join two or more such intercalibration groups, thus acting as links between the different sub-regions or ecoregions, allowing intercalibration to take place across different ecoregions.

Preliminary proposals for intercalibration groups²⁹ are:

- For **rivers**: three intercalibration groups (Northern, Middle latitude, Mediterranean).
- For **lakes**: five intercalibration groups (Northern, Atlantic, Central, Alpine, Mediterranean).
- For **coastal and transitional waters** it is recommended to use the ecoregions of System A³⁰ (Baltic, North Sea, Northeast Atlantic, and Mediterranean)

If needed, each of the intercalibration groups may be further divided to smaller geographic regions.

	<p>In this example the regional intercalibration groups for rivers and lakes are slightly different. It is recommended that when finalising the proposals, the expert groups and the Intercalibration working group should resolve this, and agree on the same geographical groups for lakes and rivers.</p>
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4.6. Selection of intercalibration sites

Member States should carry out the selection process (following steps 5.1.-5.4. in *Figure 6b, Section 4.1.*) and propose intercalibration sites for the draft register.

²⁸ WFD Annex V, 1.4.1 (vi)

²⁹ based on drafting expert group reports available on CIRCA:

http://forum.europa.eu.int/Members/irc/env/wfd/library?l=/working_groups/intercalibration/drafts/expert_drafting&vm=detailed&sb=Title

³⁰ WFD Annex XI, Map B

Selection should be based on the Member States' interpretation of the normative definitions of class boundaries (Annex V, 1.2).

A helpful tool (for the Member States) in the selection process could be ranking of water bodies (within the type selected for intercalibration) across a range of quantified pressure criteria (guidance from REFCOND) for identifying sites that are provisionally representative for the high-good and the good-moderate class boundaries (Figure 7). This could be done either on national or on (eco)regional level.

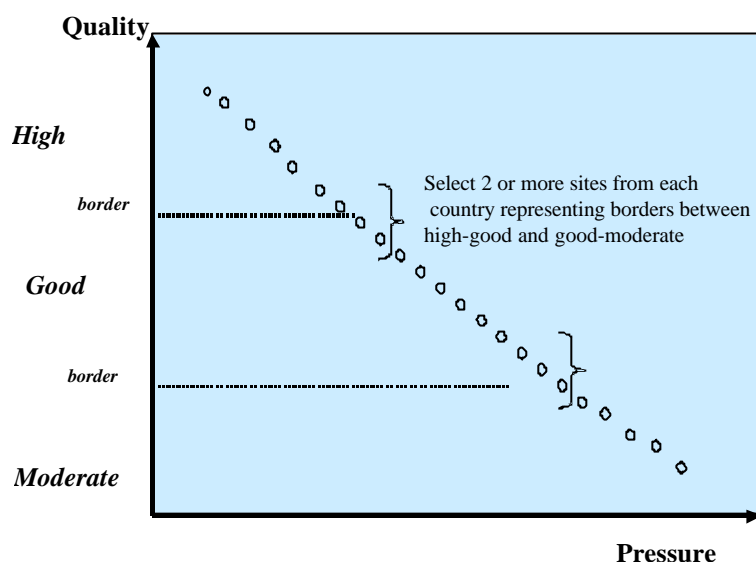


Figure 7. Illustration of the ranking of the estimated ecological quality of the sites (varying as a function of certain pressure). The Member States evaluate their data, and select 2 or more sites provisionally representative for the borders between high-good and good-moderate from each country for each type selected for the intercalibration network.


Member States should consider all available data for site selection. Ideally data should originate from national or regional monitoring systems, but national and international research projects should be considered as potential sources of information as well.

Member States should provide metadata and other information from the proposed sites to the Commission. The Commission will facilitate evaluation of the site selections by collecting metadata and making it available to the expert groups for evaluation (see [section 4.8](#)).

The following information of the proposed intercalibration sites should be reported:

- Information of the biological data (metadata)
- Information of the supporting hydromorphological, physico-chemical, and chemical data (metadata).
- If essential information is lacking at the time of the site selection, indication when and in what form the data will become available.
- A description of the pressures and an evaluation of their importance
- Description of the type according to the national typology of the site

- Type-specific reference conditions *at least* for the biological quality elements chosen for intercalibration, and the method used to obtain the reference conditions (if available)
- Description on the criteria and methodology for the provisional classification of the sites referring to normative definitions.

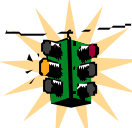
	Because of lack of data and absence of final assessment systems in 2003, the selected sites can in many cases only approximate the relevant class borders.
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4.7. Number of intercalibration sites needed

The Directive requires that at least two (2) sites representative for each (provisional) quality status borders (good- moderate, and high- good) for each type should be included in the intercalibration network.

In order to allow flexibility in the process Member States should consider proposing several sites (more than 2+2 for each type) provisionally classified representative for the relevant quality class borders and provide metadata and other information from these sites to the Commission.

It is recommended that the draft intercalibration register should contain at least 5 sites at each of the quality status boundaries for each water body type and for each geographical intercalibration group.

	The total number of sites included in the final draft register will depend on the availability of sites provisionally matching the required status classification within each type and each Member State. Also the number of proposed intercalibration sites may be different in each Member State depending on their surface area and hydrological characteristics.
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4.8. Metadatabase for establishment of the intercalibration network

A metadatabase (hosted and maintained by the Commission/EEWAI) will be established to contain all metadata and other relevant information from the sites proposed for the intercalibration network.

The purpose of this database is to provide consistent information of the selected intercalibration sites for the evaluation of the expert groups, and to allow maximum transparency in the selection process.

The metadatabase and analysis of metadata and other information will form the basis for the compilation of the draft register.

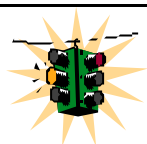
A clear format needs to be agreed how the metadata from the intercalibration sites will be organised and submitted for the metadatabase for the purpose of the expert evaluation and compilation of the draft register.

If possible, the planning for the metadata collection should be initiated already in autumn 2002, in order to have an overview of the data in spring (April – June, 2003) (see Table 3).

The metadatabase will be further developed to hold all information necessary for the intercalibration exercise ('intercalibration database', see [Section 5.1.](#))

Section 5 - Preliminary technical protocol for the intercalibration exercise

In this section the preliminary description of the process during the intercalibration exercise in 2005 and 2006 is presented. This section is not complete and further development will be required in 2003.



At present it is not possible to provide more detailed guidance, since there is not a clear overview what kind of data can be expected from the provisional intercalibration sites.

Such information will be obtained in the metadata analysis carried out during site selection process in 2003.

5.1. Stepwise description of the intercalibration exercise and the tasks of the participants

Intercalibration is carried out by the Member States. Co-operation between Member States belonging to the same geographical intercalibration group (*Section 4.6*) is needed. The role of the Commission is to facilitate the information exchange between the Member States.

1. After adaptation and publication of the register for the intercalibration sites in December 2004, the intercalibration exercise will be initiated. All data from the selected intercalibration sites will be made available for Member States through an Intercalibration database³¹ hosted by the Commission (EEWAI).
2. Member States will use data from the sites, which are within the ecoregion/geographical area, where their national assessment systems are applicable. Practically Member States belonging to the same geographical intercalibration group (*Section 4.6.*) will share data from the common intercalibration sites.
3. Using this data and possibly carrying out voluntary additional sampling³², the Member States will assess the Ecological Quality Ratio (EQR) values of the intercalibration sites representing the relationship of observed values with the type-specific reference conditions.
4. If additional sampling is carried out, Member States will use this data for intercalibration and report this data to the Intercalibration database.
5. Member States will report the results of the intercalibration exercise to the Commission.
6. The Commission is assisted by the expert groups (selected following the procedure described in *Section 4.1.*) in the analysis and evaluation of the results.

³¹ The intercalibration database can either hold all necessary data, or provide links to databases at the Member States where actual data would be available in structured form to be downloaded for the use of other Member States in the same intercalibration group.

³² The Member States that need more data for assessment than available in the database for the particular site, may carry out additional sampling. This may not be needed if the available monitoring data would be compatible with WFD.

7. The Commission will publish the results of the intercalibration exercise within six months after the completion of the intercalibration exercise. The report should at least include:
- ✓ An evaluation of the factors affecting comparability of the EQR values established by the Member States' monitoring and classification systems
 - ✓ proposals for the numerical values to set harmonised EQR-scales for the same water body types

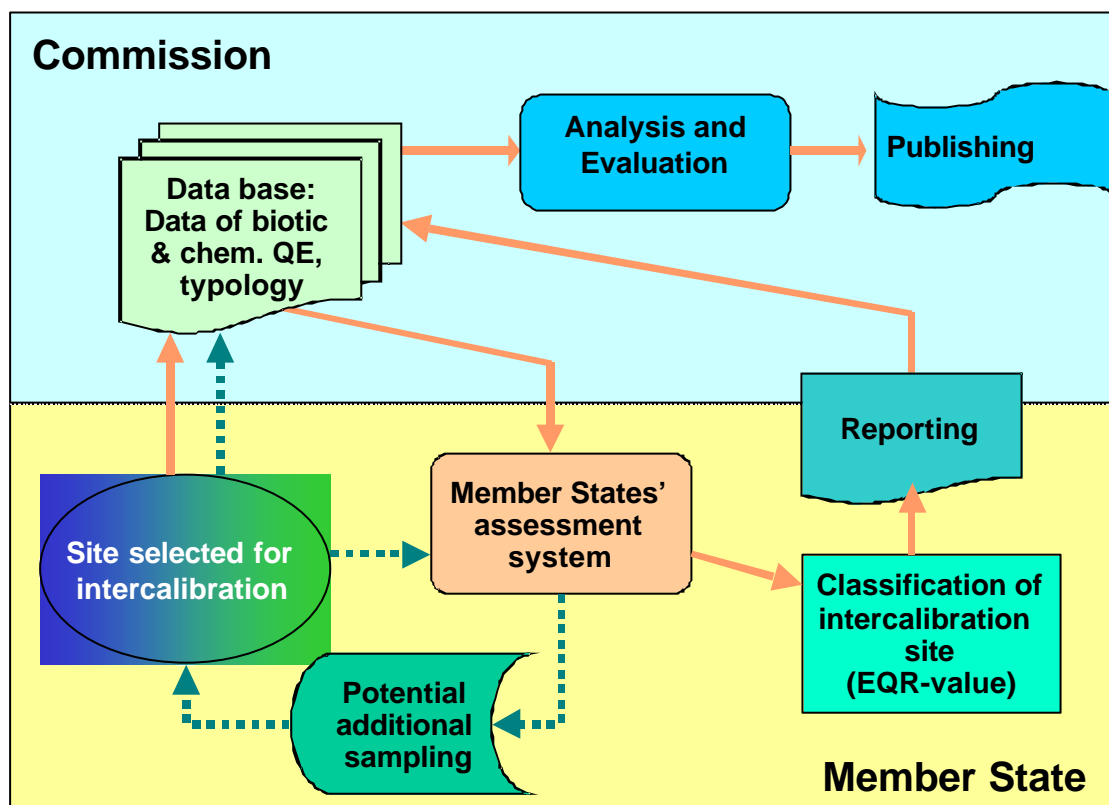


Figure 8. Process of intercalibration showing the tasks of the Member States and the Commission (stippled green arrow: Flow of data in case, if additional sampling is carried out).

Table 5. Summary and [tentative] timetable of the intercalibration exercise in 2005 and 2006.

month	Actions	Actors
Jan-05	Establish intercalibration database	Commission
Jan-05- Jun-06	Reporting data from intercalibration sites to database; assessing EQR of applicable sites	Member States, assisted by Expert Groups
Jun-06	Reporting the results to Commission	Member States

Jul-Oct-06	Analysis and evaluation of the results	Commission , Expert Groups
Oct-Dec-06	Publication of the results	Commission

5.2. Geographical scope/ applicability of different national assessment systems


The intercalibration types should be as widespread and common as possible, thus allowing **true intercalibration between the Member States belonging to same geographical intercalibration groups** as presented in [Section 4.5](#).

Member States should apply their national assessment systems to all sites in the Intercalibration network within their national borders and all comparable sites within the geographical intercalibration groups where they belong.

5.3. Criteria for selection of biological quality elements.

The Directive (Annex V, 1.4.2) requires that the final ecological status (of a water body) is determined by the lower of the values of the relevant biological and physico-chemical monitoring results. **Thus the relevant biological quality elements should be the level for intercalibration.** This requires that it is clear which of the quality elements are the relevant ones for different types of waters.

It is the competence of Member States to select the biological quality elements most sensitive to impacts (e.g. depending on their ecological assessment system)

	<p>The MONITORING, COAST, and REFCOND working groups provide guidance of the selection of relevant biological elements (indicators) with regard to pressures relevant for intercalibration (i.e. elements/indices, which are sensitive for different pressures).</p>
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5.4. Guidance for additional sampling in the intercalibration sites.

Sampling and analysis methods for each biological quality element and parameter to be measured should be carried out following the relevant ISO/CEN standards, or if not existing, the best practise/guidelines approved by the expert groups and recommended by the MONITORING working group, and/or international conventions or other international organisations.

Guidance on reporting results of the additional sampling need to be harmonised with the reporting process of existing data for the Intercalibration database.

5.5. Execution of (voluntary) intercalibration field campaigns

Intercalibration on the level of sampling and analysis methods for different ecological/biological parameters, which have low comparability and where there is little consensus on methods, could be carried out in selected water body types. Such

experiments could be done between the countries, which will carry out intercalibration using the same sites. Bearing in mind the tight deadlines to be faced, it is questionable whether it will be possible to carry out this kind of voluntary intercalibration of methods before the ‘official’ intercalibration in 2005-6.

5.6. Reporting of the final classification results.

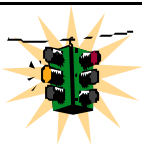
The results of the classification of intercalibration sites based on each Member States’ assessment system are reported as Ecological Quality Ratio (EQR) values for each intercalibration site.

Member States should report the results to the Commission.

Commission will be assisted by the expert groups (selected following the procedure described in *Section 4.1.*) in the evaluation of the results.

The results must be reported in detail and as transparently as possible. The following information should be included in reporting:

- Data and parameters of the biological quality elements, which were used in assessment and calculation of the EQR values.
- Details of assessment methods, including statistical methods, confidence limits of the estimates, etc.
- The method used for determination of the reference conditions of each intercalibration site should be described in detail (for each biotic quality element), also taking into account statistical uncertainty in reference values³³.
- In case that additional sampling has been carried out, sampling and analytical methods should be reported in detail (see above, *Section 5.4*)



It is not possible to give guidance how to calculate the EQR ratio in this stage, since this is dependent on Member States monitoring and assessment systems which they are using currently, or planning to adapt after guidance for Monitoring is completed. Further as EQR is calculated as a ratio, it is dependent on the method Member States choose to use for determination of the reference conditions. This guidance is prepared by REFCOND and COAST.

5.7. Expected outcome of the intercalibration exercise

Intercalibration sites selected in 2003 and 2004 represent Member States’ interpretations of the normative definitions for the high-good and the good-moderate class boundaries - **not** common European “yard sticks” for those boundaries. There is no guarantee that different Member States will have the same view on how the normative definitions of the quality class boundaries should be interpreted.

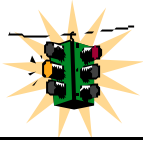
³³ The results of the intercalibration exercise are very much dependent on how the Member States define the reference conditions for each water body type. The reporting should include detailed description of the method (modelling, hindcasting, paleoecological reconstruction, or site-dependent, etc.).



Differences in interpretation of the normative definitions of the ecological quality class boundaries between Member States will be reflected in the intercalibration network, and therefore in the results of the intercalibration exercise.

If there is no agreement about which sites in the intercalibration network represent the boundaries, monitoring results (EQR values) can only be compared between Member States.

However, the WFD requires that the (EQR) values in the different Member State's classification systems representing the high-good and the good-moderate class boundaries shall be set through the intercalibration exercise.



The intercalibration exercise will be able to set EQR values for Member States classification systems representing class boundaries, if an agreement can be reached which of the intercalibration sites represent those borders.

Annex A: Key activities and the Working Groups of the Common Implementation Strategy

Key activity 1: Information sharing

- 1.1 Tools for information sharing**
- 1.2 Raising awareness**

Key activity 2: Develop guidance on technical issues

- 2.1 Guidance on the analysis of pressures and impacts**
- 2.2 Guidance on designation of heavily modified bodies of water**
- 2.3 Guidance on classification of inland surface water status and identification of reference conditions**
- 2.4 Guidance on the development of typology and classification systems of transitional and coastal waters**
- 2.5 Guidance for establishing the inter-calibration network and inter-calibration exercise**
- 2.6 Guidance on economic analysis**
- 2.7 Guidance on monitoring**
- 2.8 Guidance on tools on assessment and classification of groundwater**
- 2.9 Guidance on best practices in river basin planning**

Key activity 3: Information and data management

- 3.1 Development of a shared Geographical Information System**

Key activity 4: Application, testing and validation

- 4.1 Integrated testing of guidelines in pilot river basins**

Annex B: Members of the Working Group 2.5.

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Annex C: Legal texts related to committee procedure

Relevant articles of Decision 1999/468/EC:

Article 5,

Regulatory procedure:

1. *The Commission shall be assisted by a regulatory committee composed of the representatives of the Member States and chaired by the representative of the Commission.*
2. *The representative of the Commission shall submit to the committee a draft of the measures to be taken. The committee shall deliver its opinion on the draft within a time-limit which the chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 205(2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the Committee shall be weighted in the manner set out in that Article. The chairman shall not vote.*
3. *The Commission shall, without prejudice to Article 8, adopt the measures envisaged if they are in accordance with the opinion of the committee.*
4. *If the measures envisaged are not in accordance with the opinion of the committee, or if no opinion is delivered, the Commission shall, without delay, submit to the Council a proposal relating to the measures to be taken and shall inform the European Parliament.*
5. *If the European Parliament considers that a proposal submitted by the Commission pursuant to a basic instrument adopted in accordance with the procedure laid down in Article 251 of the Treaty exceeds the implementing powers provided for in that basic instrument, it shall inform the Council of its position.*
6. *The Council may, where appropriate in view of any such position, act by qualified majority on the proposal, within a period to be laid down in each basic instrument but which shall in no case exceed three months from the date of referral to the Council.*

If within that period the Council has indicated by qualified majority that it opposes the proposal, the Commission shall re-examine it. It may submit an amended proposal to the Council, re-submit its proposal or present a legislative proposal on the basis of the Treaty.

If on the expiry of that period the Council has neither adopted the proposed implementing act nor indicated its opposition to the proposal for implementing measures, the proposed implementing act shall be adopted by the Commission.

Article 7

1. *Each committee shall adopt its own rules of procedure on the proposal of its chairman, on the basis of standard rules of procedure, which shall be published in the Official Journal of the European Communities. Insofar as necessary existing committees shall adapt their rules of procedure to the standard rules of procedure.*
2. *The principles and conditions on public access to documents applicable to the Commission shall apply to the committees.*
3. *The European Parliament shall be informed by the Commission of committee proceedings on a regular basis. To that end, it shall receive agendas for committee meetings, draft measures submitted to the committees for the implementation of instruments adopted by the procedure provided for by Article 251 of the Treaty, and the results of voting and summary records of the meetings and lists of the authorities and organisations to which the persons designated by the Member States to represent them belong. The European Parliament shall also be kept informed whenever the Commission transmits to the Council measures or proposals for measures to be taken.*
4. *The Commission shall, within six months of the date on which this Decision takes effect, publish in the Official Journal of the European Communities, a list of all committees which assist the Commission in the exercise of implementing powers. This list shall specify, in relation to each committee, the basic instrument(s) under which the committee is established. From 2000 onwards, the Commission shall also publish an annual report on the working of committees.*
5. *The references of all documents sent to the European Parliament pursuant to paragraph 3 shall be made public in a register to be set up by the Commission in 2001.*

Article 8

If the European Parliament indicates, in a Resolution setting out the grounds on which it is based, that draft implementing measures, the adoption of which is contemplated and which have been submitted to a committee pursuant to a basic instrument adopted under Article 251 of the Treaty, would exceed the implementing powers provided for in the basic instrument, the Commission shall re-examine the draft measures. Taking the Resolution into account and within the time-limits of the procedure under way, the Commission may submit new draft measures to the committee, continue with the procedure or submit a proposal to the European Parliament

and the Council on the basis of the Treaty. The Commission shall inform the European Parliament and the committee of the action which it intends to take on the Resolution of the European Parliament and of its reasons for doing so.

Article 205 (2) of Treaty establishing the European Community:

Where the Council is required to act by a qualified majority, the votes of its members shall be weighted as follows:

Belgium 5, Denmark 3, Germany 10, Greece 5, Spain 8, France 10, Ireland 3, Italy 10, Luxembourg 2, Netherlands 5, Austria 4, Portugal 5, Finland 3, Sweden 4, United Kingdom 10.

For their adoption, acts of the Council shall require at least:

- 62 votes in favour where this Treaty requires them to be adopted on a proposal from the Commission,*
- 62 votes in favour, cast by at least 10 members, in other cases.*