THE WATER FRAMEWORK
DIRECTIVE

TRANSITIONAL AND COASTAL WATERS
SUMMARY


3. Guidance on typology, reference conditions and classification systems, for transitional and coastal waters
SUMMARY

• 4. Transitional and coastal waters in the Water Framework Directive
• 5. Annex II and V.
1.1 WFD: A long negotiation process
1.2 The purpose of the Directive
1.3 New challenges in EU water policy
1.1 WFD: A long negotiation process

- December 22, 2000, will remain a milestone in the history of water policies in Europe: on that date, the WFD (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 WFD.
1.2 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
So we have,

**Surface waters**, that can be

- Inland or Continental waters
- Transitional waters
- Coastal waters

**Groundwater**
1.3 New challenges in EU water policy

- The Directive’s key objective is to aim at achieve **good water status** for all waters by 2015.

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 circumstances, the WFD offers the opportunity to Member States to engage in **two further six-year** cycles of planning and implementation of measures.
1.3 New challenges in EU water policy

In order to get that objective, the WFD:

1. Prevents further deterioration of water, protects and enhances the status of water resources;
2. Promotes sustainable water use based on long-term protection of water resources;
3. 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;
4. Ensures the progressive reduction of pollution of groundwater and prevents its further pollution;
5. Contributes to mitigating the effects of floods and droughts.
1.4 Integration: a key concept underlying the WFD

- Integration is seen as the key to the management of water protection within the river basin district.
1.4 Integration: a key concept underlying the WFD

- Integration of environmental objectives
- Integration of all water resources, at the river basin scale
- Integration of all water uses, functions and values
- Integration of disciplines, analyses and expertise
- Integration of water legislation into a common and coherent framework.
1.4 Integration: a key concept underlying the WFD

- Integration of all significant management and ecological aspects
- Integration of a wide range of measures, including pricing and economic and financial instruments, in a common management approach
- Integration of stakeholders and the civil society in decision making
1.4 Integration: a key concept underlying the WFD

- Integration of different decision-making levels that influence water resources and water status
- Integration of water management from different Member States
1.5 Key actions that member states need to take

- To identify the individual river basins lying within their national territory and assign them to River Basin Districts (RBDs) and also 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, jointly and together with the European Commission, the intercalibration of the ecological status classification systems by 2006 (Article 2(22), Annex V);
1.5 Key actions that member states need to take

- To make operational the **monitoring networks** by 2006 (*Article 8*)
- Based on sound monitoring and the analysis of the characteristics of the riverbasin, to identify by 2009 a **programme of measures for achieving cost-effectively the environmental objectives of the WFD** (*Article 11, Annex III*);
- To produce and publish **River Basin Management Plans (RBMPs)** for each RBD including the designation of heavily modified water bodies, by 2009 (*Article 13, Article 4.3*);
1.5 Key actions that member states need to take

- 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*)
1.6 Timetable of implementation of the Water Framework Directive

2000 Directive ADOPTED

2003 Transpose into National law

   Identify River Basin Districts and Competent Authorities

   Identify draft register of intercalibration sites
1.6 Timetable of implementation of the Water Framework Directive

2004 Characterisation of water bodies, including Heavily Modified water bodies

- Review pressures and impacts and identify sites at risk of not meeting the environmental objective of ‘good status’

- Establish register of Protected Areas

- Undertake economic analysis of water use

- Final register of intercalibration sites
1.6 Timetable of implementation of the Water Framework Directive

- **2006** Comprehensive monitoring programmes operational
- **2007** Repeal some Directives
- **2008** Publish Draft River Basin Management Plans which will include a first draft of the classification of water bodies
1.6 Timetable of implementation of the Water Framework Directive

• **2009** River Basin Management Plans produced to include final classification of the ecological status of water bodies
  
  Programme of measures for each RBD(River Basic District)
  
• **2010** Water pricing policies contribute to environmental objectives

• **2013** Repeal some Directives

• **2015** “Good” Status to be achieved
1.7 Information, consultation and participation

- The management process have changed: 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
1.7 Information, consultation and participation

• Member States will inform and consult the public, including users, in particular for:

1.- The timetable and work programme for the production of river basin management plans and the role of consultation at the latest by 2006;
2.- The overview of the significant water management issues in the river basin at the latest by 2007;
3.- The draft river basin management plan, at the latest by 2008.
2.1 The challenges for the implementation of the Water Framework Directive

- In May 2001 the Common Implementation Strategy was established.
- The objective of the Strategy has been to provide support to the implementation of the Water Framework Directive by developing coherent common understanding and guidance on key elements of the Directive.
2.1 The challenges for the implementation of the Water Framework Directive

- The aim of this Strategic Document is to allow, as far as possible, a coherent and harmonious implementation of the framework directive.
2.1 The challenges for the implementation of the Water Framework Directive

• Most of the challenges and difficulties arising will inevitably be common to all Member States. Many of the European river basins are shared, crossing administrative and territorial borders, so a common understanding and approach is crucial to successful and effective implementation.

• A Common Strategy could limit the risks of bad application of the Directive and subsequent dispute.
2.1 The challenges for the implementation of the Water Framework Directive

- The implementation of the Water Framework Directive raises challenges, which are widely shared by Member States. These include:
  - an extremely demanding timetable, (in particular in the 9 preparatory years);
  - the complexity of the text and the diversity of possible solutions to scientific, technical and practical questions;
  - the problem of capacity building and an incomplete technical and scientific basis with a large number of fundamental issues in Annex II and V, which need further elaboration and substantiation to make the transition from principles and general definitions to practical implementation successful;
2.2 Competence of the individual Member State

- Implementing the WFD is a responsibility, which resides fully within the competence of the individual Member State. A Common Strategy neither could nor should challenge this fundamental principle of Community environmental law.
2.2 Competence of the individual Member State

• Moreover, in addition to the shared questions, each Member State undoubtedly will also face specific questions and challenges in the implementation process, related to national, regional and/or local situations and conditions, which can be resolved only by that particular Member State.

• The Common Implementation Strategy is developed in full recognition and respect for this fundamental principle and these specific situations.
2.3 Practical Guidance Documents

• One of the main short-term objectives of the strategy is the development of non-legally binding and practical guidance documents on various technical issues of the Directive.

• These guidance documents are targeted to those experts who are directly or indirectly implementing the Water Framework Directive in river basins.
2.3 Practical Guidance Documents

• The structure, presentation and terminology of those guidance documents are therefore adapted to the needs of these experts.

• Formal, legalistic, language is avoided wherever possible.
2.4 Working groups on key activities and projects

• Working groups will be created for the different activities and projects. The working groups will generally be chaired by a leading country or the Commission with participants from interested Member States, Candidate Countries, stakeholders and NGO’s.

• Participants from stakeholders and NGO’s should be invited when they can contribute to the work with a specific expertise.
The following working groups would be established in the first phase of the Implementation Strategy:

**Project 2.1**
Working group to develop guidance on the analysis of pressures and impacts
Lead: UK/Germany

**Project 2.2** Working group to develop guidance on designation of heavily modified bodies of water
Lead: UK/Germany
2.4 Working groups on key activities and projects

• **Project 2.3**
  Working group to develop guidance on classification of inland surface water status and identification of reference conditions
  Lead: Sweden

• **PROJECT 2.4**
  WORKING GROUP TO DEVELOP GUIDANCE ON THE DEVELOPMENT OF TYPOLOGY AND CLASSIFICATION SYSTEMS OF TRANSITIONAL AND COASTAL WATERS
  LEAD: UK/SPAIN/EEA

• **Project 2.5**
  Working group to develop guidance for establishing the inter-calibration network and inter-calibration exercise
  Lead: Commission (JRC/EI)
• The objective of the intercalibration exercise is to ensure comparable biological quality assessment systems and harmonised ecological quality criteria for surface waters in Member States and Accession Countries.
2.4 Working groups on key activities and projects

- **Project 2.6**
  Working group to develop guidance on economic analysis
  Lead: France/Commission

- **Project 2.7**
  Working group to develop guidance on monitoring
  Lead: Italy/EEA

- **Project 2.8**
  Working group to develop guidance on tools for the assessment and classification of groundwater
  Lead: Austria
2.4 Working groups on key activities and projects

- **Project 2.9**
  Working group to develop guidance on best practices in river basin planning
  Lead: Spain

- **Project 3.1**
  Working group to develop a shared Geographical Information System
  Lead: Commission (JRC/SAI)

The work of the different working groups is very strongly linked.
2.5 Progress and work programme for the implementation of the WFD, 2001 and 2002

• The first phase on the WFD implementation in 2001/2002 was dominated by the development of eleven Guidance Documents on key aspects of the Directive.
2.5 Progress and work programme for the implementation of the WFD, 2001 and 2002

- The strategic document of May 2001 identifies a number of other Community policy areas which are of relevance for the WFD implementation such as research, agriculture and others.
- The subsequent section shall complement these arrangements of the original strategy by focussing on some links to selected Community environmental policies such as the EU Marine Strategy, the Urban Wastewater and the Nitrates Directive and the EU initiatives on flooding.
2.5 Progress and work programme for the implementation of the WFD, 2001 and 2002

• In October 2002, the Commission adopted the Communication “Towards a strategy to protect and conserve the marine environment” also known as the “EU Marine Strategy”.

• Since the WFD covers coastal waters and, to some extent, territorial waters, it is important to co-ordinate the monitoring, assessment and management on the interface to the open seas. In particular, the work of the various international marine conventions is related to various aspects of the CIS work.
2.5 Progress and work programme for the implementation of the WFD, 2003 and 2004

- In the second phase during 2003/2004, further four guidance documents, several information sheets and other strategic documents (the reporting concept paper and the principles and communication of the first Art. 5 analysis) emerged.
- However, the emphasis shifted towards two main priorities: intercalibration and pilot river basin testing. Moreover, the formal aspects of the implementation came more to the forefront. The discussions on reporting requirements intensified and the first reporting deadlines in the WFD expired.
- To date, approximately 75% of the EU25 Member States have submitted the required reports
2.5 Progress and work programme for the implementation of the WFD, 2003 and 2004

Annex 4 - Working Structure under the WFD Common Implementation Strategy in 2003/2004 (overview)

- Expert Advisory Forum
  - 1) Priority Substances
  - 2) Groundwater (mid-2003)
  - Chair: Commission

- Water Directors
  - Steering of implementation process
  - Chair: Presidency, Co-chair: Commission

- Strategic Co-ordination group
  - Co-ordination of work programme
  - Chair: Commission

- Working Group 2.A “Ecological Status”
  - Lead/Co-lead: JRC, D and UK

  - Lead/Co-lead: F, SP (JRC)

- Working Group 2.C “Groundwater”
  - (after end of EAF GW)
  - Lead: Commission and AT

- Working Group 2.D “Reporting”
  - Lead: Commission

Stakeholders, NGO’s, Researchers, Experts, etc.
2.5 Progress and work programme for the implementation of the WFD, 2005 and 2006

- In addition to the focus of the previous phases (in particular intercalibration and pilot river basins), the years 2005/2006 intensified the efforts on integration of the WFD into other major policy areas such as agriculture, cohesion policy, research, transport and hydropower.
2.5 Progress and work programme for the implementation of the WFD, 2005 and 2006

[Diagram showing the structure of the implementation process with roles such as Water Directors, Strategic Steering Group, Strategic Co-ordination Group, and Working Groups for Ecological Status, Groundwater, Priority Substances, Reporting, and GIS Expert Network.]

Stakeholders, Experts, Researchers, NGOs etc.

* to be established later
The implementation of the WFD is approaching the most important deadlines and there is a general agreement that the main driver for the work programme 2007-2009 should be "less documents and more exchange of practical experiences".

The main general objective of the CIS should be to improve the quality and the comparability of the implementation.
2.5 Progress and work programme for the implementation of the WFD, 2007 to 2009


- **Strategic Steering Group “WFD and Hydromorphology”**
  Chair: DE, UK and Commission

- **Strategic Steering Group “WFD and Agriculture”**
  Chair: FR, UK and Commission

- **Water Directors**
  Steering of implementation process
  Chair: Presidency, Co-chair: Commission

- **Stakeholder Forum “Water Scarcity and Droughts”**
  Chair: Commission
  Expert Network WS&D
  Chair: FR/ES/IT

- **Strategic Co-ordination Group**
  Co-ordination of work programme
  Chair: Commission

- **Drafting Group “Objectives/Exemptions/Economics”**
  Chair: Commission and DK

- **Working Group A “Ecological Status”**
  Chair: JRC, DE and UK

- **Working Group B “Reporting”**
  Chair: Commission, EEA and FR
  “GIS” Expert Network

- **Working Group C “Groundwater”**
  Chair: Commission and AT
  “Chemical Monitoring” Chair: Commission/IT

- **Working Group D “Priority Substances”**
  Chair: Commission

- **Working Group E “Floods”**
  Chair: Commission

- **Working Group F “Priority Substances”**
  Chair: Commission

- **Art. 21 Committee**

Stakeholders, NGO’s, Researchers, Experts, etc.
3. Guidance on typology, reference conditions and classification systems, for transitional and coastal waters
3.1 Methodology of the Guidance Document of transitional and coastal waters

- In the context of this common implementation strategy, a series of working groups and joint activities has been launched to develop and test non-legally binding guidance.

- 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.
3.1 Methodology of the Guidance Document of transitional and coastal waters

• The COAST working group was created specifically to deal with the issues relating to transitional and coastal waters and to produce a non-legally binding document of practical advice for implementing the WFD, specifically Annexes II and V, in relation to these waters.

• The members of the working group included technical experts and regulators from European Union Member States, Norway and some Accession States as well as experts representing NGOs and Stakeholders organisations associated with water and environmental policy.
3.1 Methodology of the Guidance Document of transitional and coastal waters

• The Coast Working Group has had regular interactions with experts from other working groups of the Common Implementation Strategy
3.1 Methodology of the Guidance Document for transitional and coastal waters

**WG 2.4 COAST**

- WG 2.1 (Assessment of pressures and impacts).
- WG 2.2 (Designation of heavily modified water bodies).
- WG 2.3 (Reference conditions and classification for freshwater).
- WG 2.5 (Intercalibration).
- WG 2.7 (Monitoring).
3.2 Main Tasks of the Coastal Working Group

The main tasks are the following:

1.- Developing **typology**, producing descriptions of **reference conditions** or developing **classification schemes** for coastal and transitional waters;

2.- Reporting the **status of coastal and transitional waters** to the European Union as required by the Directive;

3.- Using the **results** of the classification of coastal and transitional waters to develop policy;

4.- Implementing related parts of the Directive such as the Intercalibration or Pilot River Basin Studies exercises.
3.3 Meaning of the Guidance

- The guidance is **not prescriptive** and will need to be adapted to fit local circumstances.
- Further work is required on the development of classification schemes as classification tools are tested and class boundaries are set.
- The importance of continued communication between experts from different Member States is emphasized throughout the guidance especially with respect to typology, reference conditions and classification.
4. Transitional and coastal waters in the Water Framework Directive
4.1 Definitions of transitional and coastal waters in the WFD

The Directive(ART.2.6) defines **transitional waters** in this way:

“‘Transitional waters’ are bodies of **surface water in the vicinity of river mouths** which are partly saline in character as a result of their proximity to coastal waters but which are substantially influenced by freshwater flows.”
4.1 Definitions of transitional and coastal waters in the WFD

• “‘Coastal water’ means **surface water on the landward side of a line**, every point of which is at a distance of **one nautical mile on the seaward side from the nearest point of the baseline** from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters.” Art.2(7) WFD
4.1 Definitions of transitional and coastal waters in the WFD

- The *ecological status of coastal waters* should be classified from the landward extent of either the coastal or transitional waters out to one *nautical mile from the baseline*. 
4.1 Definitions of transitional and coastal waters in the WFD

- According to the United Nations Convention on the Law of the Sea (UNCLOS) the baseline is measured as the low-water line except along the mouths of estuaries and heads of bays where it cuts across open water.
- Along highly indented coastlines, bays, mouths of estuaries or coastlines with islands, the baseline can be drawn as a straight line.
- Each Member State has a legislative baseline associated with this definition.
4.1 Definitions of transitional and coastal waters in the WFD

- The Directive gives no indication of the landward extent of either transitional or coastal waters.
- One of the hydromorphological quality elements for both transitional and coastal waters is the structure of the intertidal zone.
- It is recommended that transitional and coastal water bodies include the intertidal area from the highest to the lowest astronomical tide.
4.2 Defining surface water bodies within transitional and coastal waters

- The Directive requires **surface waters** within the River Basin District **to be split into water bodies**.
- **Water bodies** represent the **classification and management unit** of the Directive.
- A range of factors will determine the identification of water bodies.
- Some of these will be determined by the requirements of the Directive and others by practical water management considerations.
4.2 Defining surface water bodies within transitional and coastal waters

• Annex II 1.1 WFD

• “Member States shall **identify the location and boundaries of bodies of surface water** and shall carry out an initial characterisation of all such bodies”.

4.2 Approach to the identification of surface water bodies.

1. Define River Basin District

2. Divide surface waters into one of six surface water categories (i.e. rivers, lakes, transitional waters, coastal waters, artificial and heavily modified water bodies)

3. Sub-divide surface water categories into types, using factors listed in Annex II, and assign surface waters to one type

4. Sub-divide a water body of one type into smaller water bodies according to pressures and resulting impacts

[Article 3(1)]
[Annex II 1.1(b)]
[Annex II 1.1(d)]
[Purpose: to ensure water bodies can be used to provide an accurate description of the status of surface waters]
4.2 Defining surface water bodies within transitional and coastal waters

• The first stage in describing surface water bodies is to assign all surface waters to a surface water category – rivers, lakes, transitional waters or coastal waters – or to artificial surface water bodies or heavily modified surface water bodies
4.3 Surface Water Categories

Annex II 1.1(i)

• “The surface water bodies within the river basin district shall be identified as falling within either one of the following surface water categories – rivers, lakes, transitional waters or coastal waters – or as artificial surface water bodies or heavily modified surface water bodies.”
4.3 Surface Water Categories
4.4 Surface Water Types

• The Directive recognises that the ecological character of surface waters will vary according to their different physical regimes.

• For example, a marine scientist expects to find different biological communities on an exposed Atlantic rocky shore compared to a fjord, a bay in the Baltic or a Mediterranean coastal lagoon.
4.4 Surface Water Types

• The purpose of assigning water bodies to a physical type is to ensure that valid comparisons of its ecological status can be made.

• For each type, reference conditions must also be described as these form the ‘anchor’ for classification of the water bodies status or quality.
4.4 Surface Water Types
4.5 Surface Water Bodies

- The water body is the management unit of the Directive.
- Water bodies may be identified for all surface waters (natural, heavily modified and artificial waters).
- This step is of major importance for the implementation process because water bodies represent the units that will be used for reporting and assessing compliance with the Directive’s principal environmental objectives.
4.5 Surface Water Bodies

- To assign a single classification and effective environmental objectives to a water body it may be necessary to divide an area which is of one type further into two or more separate water bodies.
- Water bodies may not spread over two types because reference conditions and hence environmental objectives are type specific.
4.5 Surface Water Bodies

- **Article 2(10)**
- "Body of surface water" means a discrete and significant element of surface water such as a lake, a reservoir, a stream, river or canal, part of a stream, river or canal, a transitional water or a stretch of coastal water.
4.5 Surface Water Bodies
4.5 Surface Water Bodies

• According to the definition in the Directive, water bodies must be “discrete and significant”.

• This means that they must not be arbitrary sub-divisions of river basin districts, that they must not overlap with each other, nor be composed of elements of surface water that are not contiguous.
4.5 Surface Water Bodies

- The Directive specifies that rivers and coastal waters may be sub-divided. It is assumed that transitional waters may also be sub-divided as long as the resulting water bodies are discrete and significant.

- In the case of coastal waters, stretches of open coast are often continuous (unless divided by transitional waters); here subdivisions may follow significant changes in substratum, topographies or aspect.
The splitting of surface water categories into surface water bodies.
4.5 Surface Water Bodies

- The need to keep separate two or more contiguous water bodies of the same type depends upon the pressures and resulting impacts. For example, a discharge may cause organic enrichment in one water body but not in the other.

- Such an area of one type could therefore be divided into two separate water bodies with different classifications. If there were no impact from the discharge it would not be necessary to divide the area into two water bodies as it would have the same classification and should be managed as one entity.
4.5 Surface Water Bodies

- The Directive only requires sub-divisions of surface water that are necessary for the clear, consistent and effective application of its objectives.
- Sub-divisions of coastal and transitional waters into smaller and smaller water bodies that do not support this purpose should be avoided.
4.5 Surface Water Bodies

• **Article 5(2)**

• “The analyses and reviews mentioned under” [Article 5] “paragraph 1 shall be reviewed, and if necessary updated at the latest 13 years after the date of entry into force of this Directive and every six years thereafter.”
4.5 Surface Water Bodies

• Every six years from 2013, Member States **must review the characterisation of water bodies**, including the type-specific reference conditions, so as to reflect greater understanding and knowledge of the systems and natural variability including climate change.

• In this review, water bodies whose status changes may be merged with adjacent water bodies of the same status **and** the same type.
4.6 Specific of Transitional waters

The Directive defines **Transitional waters** as:

- **Article 2 (6)**
- "‘Transitional waters’ are bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their proximity to coastal waters but which are substantially influenced by freshwater flows.”
4.6 Specific of Transitional waters

- In the WFD, it is clear that the setting of boundaries between transitional waters, freshwaters and coastal waters must be ecologically relevant.
4.6 Specific of Transitional waters

- Transitional waters are:
  1. "...in the vicinity of a river mouth" meaning close to the end of a river where it mixes with coastal waters;
  2. "...partly saline in character" meaning that the salinity is generally lower than in the adjacent coastal water;
  3. "...substantially influenced by freshwater flow" meaning that there is a change to salinity or flow.
4.6 Specific of Transitional waters

- If riverine dynamics occur in a plume outside the coastline because of high and strong freshwater discharge, the transitional water may extend into the sea area (allowed in definition 1).
- For the purposes of the Directive, the main difference between transitional and coastal waters is the inclusion of the abundance and composition of fish fauna in the list of biological quality elements for the classification assessment of transitional waters.
4.6 Specific of Transitional waters

- Transitional waters are usually characterised by their morphological and chemical features in relation to the size and nature of the inflowing rivers.
- Many different methods might be used to define them but the method should be relevant ecologically. This will ensure reliable derivation of type-specific biological reference conditions.
4.6 Specific of Transitional waters

- In certain areas of the Baltic Sea, such as the Bothnian Bay, the salinity of coastal water is similar to that of fresh water. As a result, riverine fresh water life may extend into the adjacent coastal water.
- However, because of the different physical characteristics (flow dynamics) of a river and coastal water (Article 2(6)), the same biological community falls into two different categories of surface waters (river - coastal) and hence, must be separated into two different water bodies, as required by the Directive.
- In such cases, the delimitation of a transitional water might be superfluous.
4.7 The seaward boundary of transitional waters: definition

- To assist Member States in defining the seaward boundary of transitional waters, four methods are proposed.
  1. The use of boundaries defined under other European and national legislation such as the Urban Waste Water Treatment Directive;
  2. Salinity gradient;
  3. Physiographic features;
4.7 The seaward boundary of transitional waters: definition

- Member States should select the most ecologically relevant method for their own situation.
- The use of one or more of these approaches will allow comparisons across all Member States.
4.7 The seaward boundary of transitional waters: definition under different legislation

- Where boundaries of transitional waters were defined for the purposes of existing legislation, they may be used to define transitional waters under the WFD as long as they are consistent with the WFD categories.
4.7 The seaward boundary of transitional waters: definition under different legislation

- Article 17(1) and (2) of the Urban Waste Water Treatment Directive (91/271/EC) gave Member States the task of establishing an implementation programme to include information on discharges into different types of water bodies, which might have implicated defining the outer (seaward) limit of estuaries.
4.7 The seaward boundary of transitional waters: salinity gradient

- If salinity measurements exist, the outer boundary should be drawn where the salinity of the transitional water is usually substantially lower than the salinity of the adjacent coastal water.
- By definition, the transitional water must also be substantially influenced by freshwater flows.
4.7 The seaward boundary of transitional waters: salinity gradient

- For larger rivers the influence of freshwater is likely to extend into coastal waters
4.7 The seaward boundary of transitional waters: salinity gradient

- Examples of the plumes of the Loire and Gironde estuaries on the French Atlantic coast.
- The extension of the plume (salinity gradient) varies according to freshwater flow and tide conditions.
4.7 The seaward boundary of transitional waters: physiographic features

• Where morphological boundaries lie close to enclosing geographic features such as headlands and islands, such features may be used to define the boundary.

• This is acceptable in some cases such as bar-built estuaries whose morphological features may also coincide with biological boundaries.
4.7 The seaward boundary of transitional waters: physiographic features

- Bar-built estuary showing that geomorphological and biological limits of transitional waters can coincide.
4.7 The seaward boundary of transitional waters: modelling

- Models may be designed to predict the size of transitional waters. This method may be applicable where no estuary boundary has been defined for the purpose of existing legislation and where no suitable salinity data are available.
- Models may be used to estimate the area of water of a salinity substantially less than the salinity of the adjacent coastal water.
4.8 The freshwater boundary of transitional waters

- Annex II 1.2.3. and 1.2.4 of the Directive defines freshwater as less than 0.5 salinity.
- There are two main methods for defining the freshwater boundary of transitional waters: the fresh/salt water boundary or the tidal limit.
- In some large estuaries, the tidal limit can be several tens of kilometers further inland than the freshwater/salt water boundary.
Methods for defining the freshwater boundary of transitional waters.
4.8 The freshwater boundary of transitional waters

- It is suggested that either the fresh/salt boundary or the tidal limit be used to define the freshwater boundary of transitional waters depending upon which method is most suitable to local circumstances.

- Whichever method is used, it is clear that all transitional waters must abut freshwater, leaving no section of the system unassigned to a surface water category.
4.9 Assigning coastal waters within the river basin district

Article 3.1

• “Coastal waters shall be identified and assigned to the nearest or most appropriate river basin district or districts.”

• The free exchange of substances from river basin districts to the open sea takes place in coastal waters. Coastal waters must be assigned to a River Basin District.

• When assigning a stretch of coastal water to a River Basin District the objective is to ensure that coastal waters are assigned to the closest possible or the most appropriate natural management unit.
• 5. ANNEX II AND V
ANNEX II
1 SURFACE WATERS
1.1. Characterisation of surface water body types

Member States shall identify the location and boundaries of bodies of surface water and shall carry out an initial characterisation of all such bodies in accordance with the following methodology. Member States may group surface water bodies together for the purposes of this initial characterisation.
• The surface water bodies within the river basin district shall be identified as falling within either one of the following surface water categories — rivers, lakes, transitional waters or coastal waters — or as artificial surface water bodies or heavily modified surface water bodies.
5. Annex II and V

- The Water Framework Directive requires Member States to identify, for each type of body of water, reference conditions for the purpose of identifying a reference biological community in accordance with Annex II, section 1.3. The reference conditions must satisfy certain chemical and hydromorphological criteria set out in Annex V for each category of body of water, rivers, lakes, transitional waters and coastal waters.
• For each surface water category, the relevant surface water bodies within the river basin district shall be differentiated according to type. These types are those defined using either ‘system A’ or ‘system B’ identified in section 1.2.
• The Water Framework Directive requires member states to develop a system for dividing surface waters into units, which had (prior to human impacts) similar hydro-morphology and physico-chemistry. These units form the basis upon which a classification system is built. These units also represent the units between which the Commission will carry out an inter-calibration exercise, which will compare the classification boundaries set by member states.
• The Directive proposes two typology options:
  - "System A" which would have 15 classes; and
  - "System B" which is more flexible and would allow Member states to define the appropriate level of differentiation
• If system A is used, the surface water bodies within the river basin district shall first be differentiated by the relevant ecoregions in accordance with the geographical areas identified in section 1.2 and shown on the relevant map in Annex XI.

• The water bodies within each ecoregion shall then be differentiated by surface water body types according to the descriptors set out in the tables for system A.
• Member States shall submit to the Commission a map or maps (in a GIS format) of the geographical location of the types consistent with the degree of differentiation required under system A.
Ecoregions for transitional waters and coastal waters
Annex XI WFD

[Map showing ecoregions in Europe and parts of South America]
Ecoregions for transitional waters and coastal waters
Annex XI WFD

- 1. Atlantic Ocean
- 2. Norwegian Sea
- 3. Barents Sea
- 4. North Sea
- 5. Baltic Sea
- 6. Mediterranean Sea
• If system B is used, Member States must achieve at least the same degree of differentiation as would be achieved using system A.

• Accordingly, the surface water bodies within the river basin district shall be differentiated into types using the values for the obligatory descriptors and such optional descriptors, or combinations of descriptors, as are required to ensure that type specific biological reference conditions can be reliably derived.
• 1.2. Ecoregions and surface water body types
• Vid. Páginas 33 y 34 de la Directiva que muestran la aplicación de los sistemas A y B a las aguas costeras y de transición
• Establishment of type-specific reference conditions for surface waterbody types

• (i) For each surface water body type characterised in accordance with section 1.1, type-specific hydromorphological and physicochemical conditions shall be established representing the values of the hydromorphological and physicochemical quality elements specified in point 1.1 in Annex V for that ecological status as defined in the relevant table in point 1.2 in Annex V.
• Type-specific biological reference conditions shall be established, representing the values of the biological quality elements specified in point 1.1 in Annex V for that surface water body type at high ecological status as defined in the relevant table in section 1.2 in Annex V.
5. Annex II and V

- This key activity aims at the development of a protocol for identification of reference conditions for transitional and coastal waters, and for identification of bodies of water corresponding to the boundaries between high, good and moderate status in transitional and coastal waters.
5. Annex II and V

- The project is intended to develop guidance on typology and classification for coastal and transitional waters. The aim is to identify existing classification and typology tools, which represent best practice and which could be further developed to support Water Framework Directive implementation.
5. Annex II and V

- Type-specific conditions and type-specific biological reference conditions may be either spatially based or based on modelling, or may be derived using a combination of these methods.
- Where it is not possible to use these methods, Member States may use expert judgement to establish such conditions.
- In defining high ecological status in respect of concentrations of specific synthetic pollutants, the detection limits are those which can be achieved in accordance with the available techniques at the time when the type-specific conditions are to be established.
5. Annex II and V

• For spatially based type-specific biological reference conditions Member States shall develop a reference network for each surface water body type.

• The network shall contain a sufficient number of sites of high status to provide a sufficient level of confidence about the values for the reference conditions, given the variability in the values of the quality elements corresponding to high ecological status for that surface water body type.
5. Annex II and V

- Type-specific biological reference conditions based on modelling may be derived using either predictive models or hindcasting methods.
- The methods shall use historical, palaeological and other available data and shall provide a sufficient level of confidence about the values for the reference conditions to ensure that the conditions so derived are consistent and valid for each surface water body type.
5. Annex II and V

- Where it is not possible to establish reliable type-specific reference conditions for a quality element in a surface water body type due to high degrees of natural variability in that element, not just as a result of seasonal variations, then that element may be excluded from the assessment of ecological status for that surface water type.
- In such circumstances Member States shall state the reasons for this exclusion in the river basin management plan.
5. Annex II and V

• 1.4. Identification of Pressures
• Member States shall collect and maintain information on the type and magnitude of the significant anthropogenic pressures to which the surface water bodies in each river basin district are liable to be subject,
• 1.5. **Assessment of Impact**

- Member States shall carry out an assessment of the susceptibility of the surface water status of bodies to the pressures identified above.
- Member States shall use the information collected above, and any other relevant information including existing environmental monitoring data, to carry out an assessment of the likelihood that surface waters bodies within the river basin district will fail to meet the environmental quality objectives set for the bodies under Article 4.
5. Annex II and V

- Member States may utilise modelling techniques to assist in such an assessment.
- For those bodies identified as being at risk of failing the environmental quality objectives, further characterisation shall, where relevant, be carried out to optimise the design of both the monitoring programmes required under Article 8, and the programmes of measures required under Article 11.
• ANNEX V
• 1. SURFACE WATER STATUS
• 1.1. Quality elements for the classification of ecological status
1.1.3. Transitional waters

Biological elements

Composition, abundance and biomass of phytoplankton

Composition and abundance of other aquatic flora

Composition and abundance of benthic invertebrate fauna

Composition and abundance of fish fauna

Hydro-morphological elements supporting the biological elements
• Morphological conditions
• depth variation
• quantity, structure and substrate of the bed
• structure of the intertidal zone
• Tidal regime
• freshwater flow
• Wave exposure
• Chemical and physico-chemical elements supporting the biological elements

• General

• Transparency
• Thermal conditions
• Oxygenation conditions
• Salinity
• Nutrient conditions
• **Specific pollutants**

• Pollution by all priority substances identified as being discharged into the body of water

• Pollution by other substances identified as being discharged in significant quantities into the body of water
• 1.1.4. Coastal waters

• **Biological elements**
  - Composition, abundance and biomass of phytoplankton
  - Composition and abundance of other aquatic flora
  - Composition and abundance of benthic invertebrate fauna
• *Hydromorphological elements supporting the biological elements*
• Morphological conditions
• depth variation
• structure and substrate of the coastal bed
• structure of the intertidal zone
• Tidal regime
• direction of dominant currents
• wave exposure
• Chemical and physico-chemical elements supporting the biological elements
• General
• Transparency
• Thermal conditions
• Oxygenation conditions
• Salinity
• Nutrient conditions
• **Specific pollutants**
  
  • Pollution by all priority substances identified as being discharged into the body of water
  
  • Pollution by other substances identified as being discharged in significant quantities into the body of water
• The following text provides a general definition of ecological quality. For the purposes of classification the values for the quality elements of ecological status for each surface water category are those given in tables 1.2.1 to 1.2.4 below.

• 1.2.3 Transitional waters
• 1.2.4 Coastal waters
HIGH STATUS

• There are no, or only very minor, anthropogenic alterations to the values of the physico-chemical and hydromorphological quality elements for the surface water body type from those normally associated with that type under undisturbed conditions.

• The values of the biological quality elements for the surface water body reflect those normally associated with that type under undisturbed conditions, and show no, or only very minor, evidence of distortion.

• These are the type-specific conditions and communities
GOOD STATUS

• The values of the biological quality elements for the surface water body type show low levels of distortion resulting from human activity, but deviate only slightly from those normally associated with the surface water body type under undisturbed conditions.
MODERATE STATUS

• The values of the biological quality elements for the surface water body type deviate moderately from those normally associated with the surface water body type under undisturbed conditions.
• The values show moderate signs of distortion resulting from human activity and are significantly more disturbed than under conditions of good status.
• Waters achieving a status below moderate shall be classified as poor or bad.
POOR WATERS

• Waters showing evidence of major alterations to the values of the biological quality elements for the surface water body type and in which the relevant biological communities deviate substantially from those normally associated with the surface water body type under undisturbed conditions, shall be classified as poor.
BAD WATERS

• Waters showing evidence of severe alterations to the values of the biological quality elements for the surface water body type and in which large portions of the relevant biological communities normally associated with the surface water body type under undisturbed conditions are absent, shall be classified as bad.
5. Annex II and V

The guidance about Transitional and Coastal waters links to the project on the definition of reference conditions for inland surface waters (2.3). The problems faced in method development in freshwaters and coastal/transitional waters are very different but it is considered that close collaboration between the two projects will ensure that the projects will benefit from the research outcomes.
5. Annex II and V

• Both projects can then contribute to the development of project on inter-calibration exercise in both inland surface waters and coastal/transitional waters (2.5). Links will also exist between this project and the projects on analysis of pressures and impacts (2.1), heavily modified water bodies (2.2), monitoring (2.7), and best practices in river basin management (2.9).