

The Water Framework Directive (WFD) marks a new approach to the protection and improvement of our water resources and aquatic ecosystems across Europe. In contrast to previous legislation, the WFD aims at protecting all waters and water-dependent ecosystems: groundwater, rivers, lakes, transitional waters (estuaries), coastal waters and wetlands. A primary environmental objective of the WFD for surface waters is that the ecological and chemical status of all water bodies will be good or high by 2015, and that in no case will the status deteriorate below its present condition. The main unit of management for the WFD is the river basin district (RBD), of which there are eight on the island of Ireland. The competent authorities for the directive are the relevant local authorities for each RBD and the EPA.

## THE WATER FRAMEWORK DIRECTIVE – A NEW MANAGEMENT APPROACH

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## Overview of New Approach

The directive establishing a framework for Community action in the field of water policy, commonly known as the Water Framework Directive (WFD), was formally adopted by the European Union (EU) Parliament and Council in October 2000 (EP and CEU, 2000). It represents the outcome of a general review of water policy in the EU initiated by the Commission in the early 1990s at the request of the Council, and requires a major change in the approach to water resources management in the member states.

The WFD provides a new approach for the protection and improvement of water resources and aquatic ecosystems through a system of participatory river basin management planning supported by new assessment and monitoring programmes. It introduces a river basin planning cycle commencing in 2009 with the production of the first river basin management plans (RBMPs), and running every six years thereafter. Each cycle is a continuous and iterative process of assessment, review and action resulting in the development and implementation of a final RBMP to meet the aims and objectives of the WFD.

The WFD aims at protecting and enhancing all waters – groundwater, rivers, lakes, transitional waters (estuaries) and coastal waters – and includes terrestrial ecosystems and wetlands directly dependent on aquatic systems (see Figure 5.1). In contrast to the aims of many of the existing Water Directives, which seek to protect specific uses of water, the WFD is concerned, *inter alia*, with the protection of the aquatic ecosystem, prevention of further deterioration and, where necessary, its restoration, to achieve conditions (good status)

in all waters that are no more than slightly degraded from those of the natural or reference state. The definition of good status in the case of surface waters is based on both ecological status, i.e. the composition of the faunal and floral communities and the natural chemical and physical characteristics, and chemical status, which, in the context of the directive, refers to a number of specified toxic and/or bioaccumulative substances. In the case of groundwaters good status relates to the natural chemical composition of the water and to these same chemical substances as well as to quantitative status (i.e. the extent to which annual recharge to aquifers is depleted by abstractions).

The WFD sets out clear deadlines for each of the requirements, which add

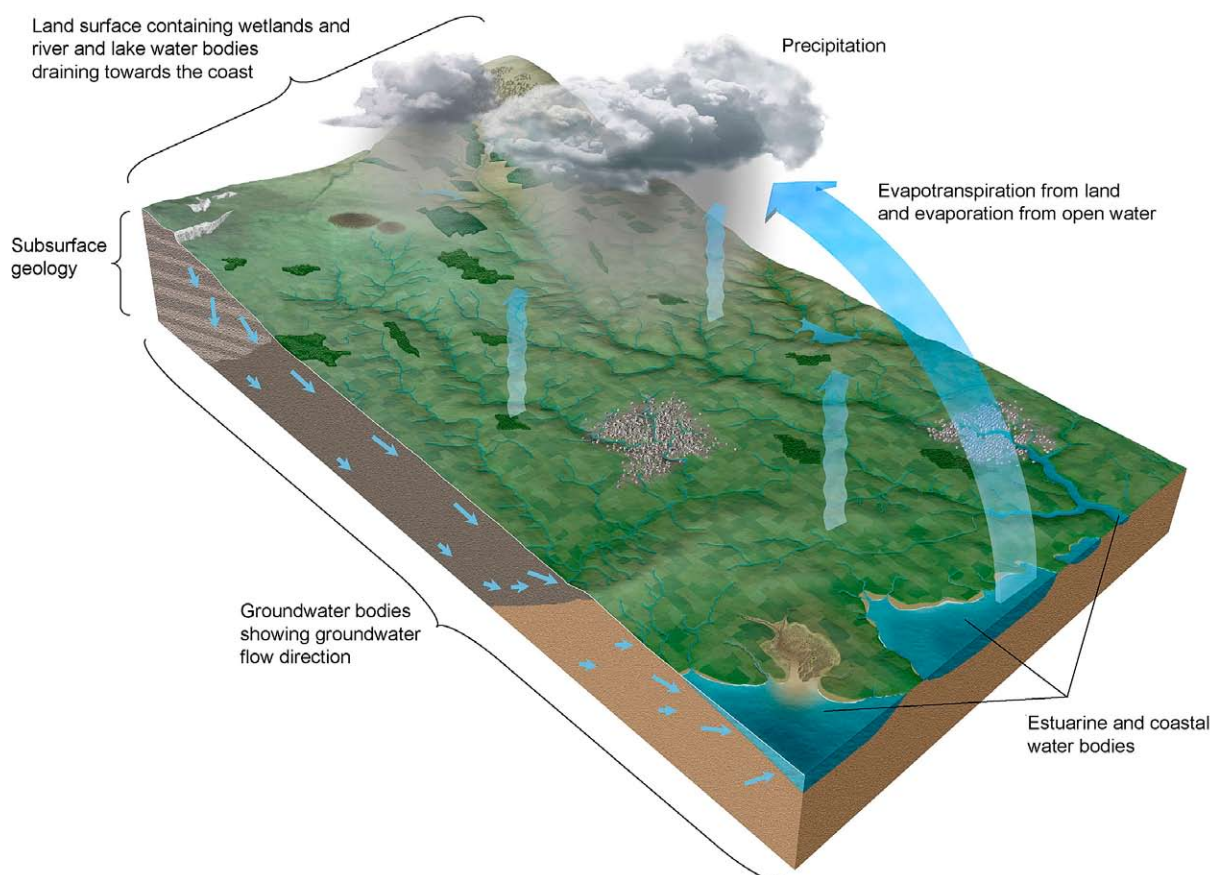
up to an ambitious overall timetable (EC, 2008). The key milestones are listed in Table 5.1.

The ecological classification systems being developed by the EPA will assign surface-water bodies to one of the five ecological status classes: 'high', 'good', 'moderate', 'poor' and 'bad'. Certain water uses, such as the generation of hydropower, navigation and flood defence, can depend on substantial physical alterations to a water body. These alterations may be incompatible with the achievement of good status. Such water bodies are designated as Heavily Modified Water Bodies (HMWBs, e.g. a river impounded to form a reservoir) or Artificial Water Bodies (AWBs, e.g. a constructed canal). For these water bodies, alternative objectives may

**Table 5.1 Key Milestones for the Implementation of the WFD**  
(Source: EC, 2008)

Year	Issue	Status
2000	Directive entered into force (Art. 25)	Completed
2003	Transposition in national legislation (Art. 23)	Completed
	Identification of River Basin Districts and Competent Authorities (Art.3)	
2004	Characterisation of river basin: pressures, impacts and economic analysis (Art. 5)	Completed
2006	Establishment of monitoring network (Art.8)	Completed
	Start public consultation (at the latest) (Art. 14)	
2008	Present draft river basin management plan (Art. 13)	To Be Completed
2009	Finalise river basin management plan including programme of measures and begin first management cycle (Art. 13 & 11)	To Be Completed
2010	Introduce pricing policies (Art. 9)	To Be Completed
2012	Make operational programmes of measures (Art. 11)	To Be Completed
2015	Meet environmental objectives First management cycle ends Second river basin management plan & first flood risk management plan (Art. 4)	To Be Completed
2021	Second management cycle ends (Art. 4 & 13)	To Be Completed
2027	Third management cycle ends, final deadline for meeting objectives (Art. 4 & 13)	To Be Completed

**Figure 5.1** The WFD seeks to Protect All Waters of the Hydrological Cycle: Groundwaters, Rivers, Lakes, Estuaries, Coastal Waters and Wetlands (Source: [www.wfdvisual.com](http://www.wfdvisual.com))



be set that can be achieved without significantly affecting the specific use. Each such heavily modified or artificial water body will be assigned to one of the five classes of ecological potential: 'maximum', 'good', 'moderate', 'poor' and 'bad'.

The default objectives of the WFD include the prevention of any deterioration in the existing status of waters, including the specific requirements to maintain 'high status' where it exists, and to ensure that all waters achieve at least 'good status' by 2015. This new approach is different from previous water management strategies in that it is comprehensive and structured. It is comprehensive in that it addresses the water environment in the whole river basin. It is structured in that it

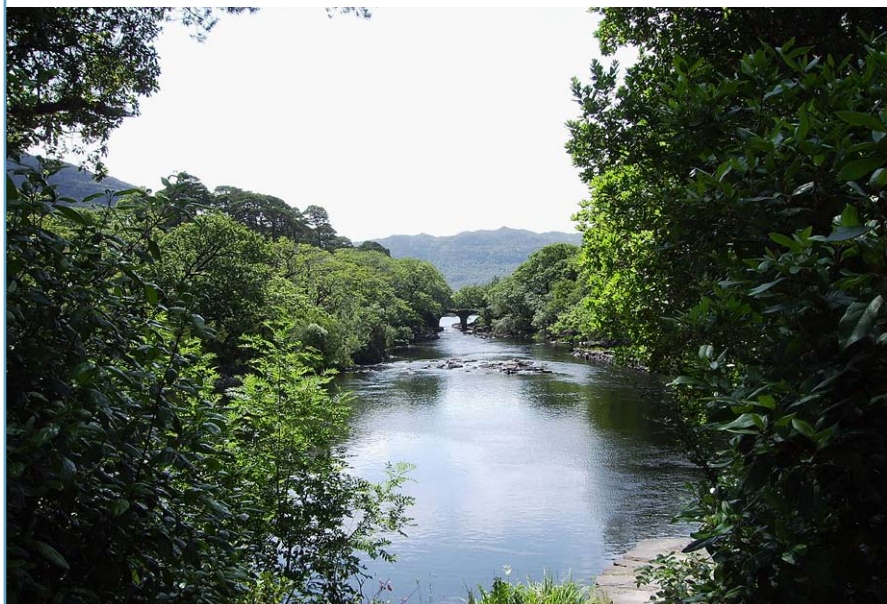
sets out specific activities that aim at identifying and assessing the status of all waters and characterise the pressures exerted on them, followed by the development and implementation of a prioritised management plan. The plan will set out objectives for each water body and contain appropriate measures to address identified problems.

Any standard and objective related to protected areas (*inter alia*, bathing water areas, drinking water areas and areas protected under the Habitats and Birds Directives) must be complied with by 2015, unless otherwise specified in the Community legislation under which the individual protected areas have been established. When the EPA classifies a surface-water body

associated with a protected area, the failure of the water body to achieve the water-related objectives of the protected area will result in the surface-water body being classified as less than good regardless of whether other objectives are met.

Overall, these targets, which must be achieved by 2015, are likely to be very demanding in many cases, especially in waters where there has been a long history of pollution or, as with some surface waters, physical disturbance. Therefore, the directive makes provision for less stringent objectives or delayed targets in certain circumstances, including situations where the reversal of physical alterations is not practicable or is disproportionately expensive. In addition to the quality targets, the





directive promotes the sustainable use of water resources, the progressive reduction and prevention of pollution of groundwater, the elimination of the discharge of specified hazardous substances and the mitigation of the effects of floods and droughts.

### New Arrangements for National Implementation

The main unit of management of the WFD across Europe is the river basin district (RBD). A river basin or catchment is an area of land from which all surface run-off flows through a series of streams, rivers and possibly lakes into the sea at a single river mouth or estuary. An RBD comprises one or more neighbouring river basins together with their associated wetlands, groundwaters and coastal waters. The distribution of flora and fauna in surface waters will vary both within RBDs due to the physical differences in habitats and also regionally across Europe due to geoclimatic variations. The WFD addresses this issue by dividing the EU into a series of ecoregions. For rivers and lakes Ireland shares

an ecoregion with Northern Ireland (Ecoregion 17), and for estuaries and coastal waters Ireland shares an ecoregion with the UK (Ecoregion 1).

The Irish regulations that transposed the WFD into national law were made in December 2003 (SI 722 of 2003). The competent authorities principally responsible for implementing the directive are the local authorities acting jointly and the EPA. RBDs have been identified and they act as the administrative areas for coordinated water management. Cross-border basins covering the territory of Ireland and Northern Ireland were assigned to an international RBD (IRBD). There are eight RBDs on the island of Ireland (see Map 5.1), three of which are IRBDs.

The regulations specify particular local authorities to act as the coordinator for all the relevant local authorities in each RBD. Water management in the North Western and Neagh Bann IRBDs is being progressed by the North–South Shared Aquatic Resource (NS-SHARE) project. This project, funded under the EU INTERREG IIIA programme, forms an important element for

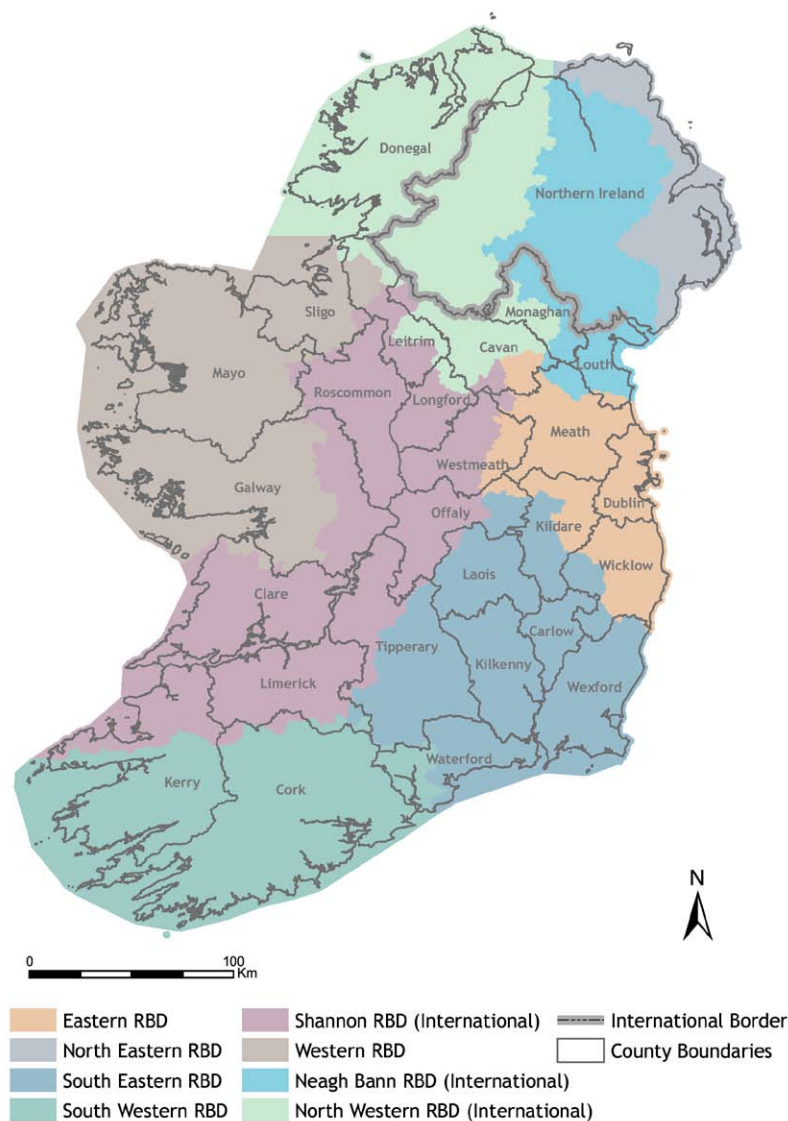
implementation of the WFD and for North–South coordination in the IRBDs designated under the directive. The EPA and other relevant public authorities working with the RBD projects have together been the main vehicle for WFD implementation so far in Ireland. Table 5.2 provides a summary of the lead local authority in each RBD and websites where more information specific to each RBD is available.

At national level a number of working groups comprising government departments and public authorities have been established to coordinate the implementation of the Directive. These include the National Technical Coordination Group (chaired by EPA) and associated sub-groups to address implementation aspects of a technical nature, and the National Coordination Group (chaired by DEHLG) to address strategic and policy issues.

A North–South WFD Coordination Group and a North–South Technical Advisory Group have been established to facilitate a harmonised approach on the island of Ireland. In addition Ireland is represented on the UK Technical Advisory Group (UKTAG), which provides guidance on the implementation of the directive in the UK.

At EU level, the Commission has convened a Strategic Coordination Group (SCG) to oversee and advise on a common implementation strategy (CIS) for the directive in the Union. The SCG comprises senior scientific and administrative officials from each member state together with Commission personnel. A number of working groups report to the SCG on specific matters and their advice has been issued to the member states in a set of guidance documents for the promotion of the CIS.

**Map 5.1** River Basin Districts on the Island of Ireland (Source: DELG and DOENI, 2003)



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## The Characterisation of Ireland's River Basins

In 2004 a characterisation and analysis of all RBDs in Ireland was undertaken, as required by Article 5 of the WFD (EPA and RBDs, 2005). This report, referred to as the Characterisation Report, included an analysis of the main characteristics of surface waters and groundwaters, a review of the impacts of human activity on the status of water bodies and an economic analysis of water use.

Surface-water bodies and groundwater bodies were delineated in each river basin and are intended to be the units that will be assigned a 'status' and that may, if necessary, be subject to management measures to improve or maintain their target status. Surface-water bodies were defined using the 1:50,000 scale Ordnance Survey Maps and are defined in the WFD as discrete and significant elements of surface water such as a river or canal, a lake, an estuary or stretch of coastal water (or part thereof). Groundwater bodies were delineated using Geological Survey of Ireland (GSI) data (e.g. bedrock and aquifer maps) and are defined in the WFD as distinct volumes of groundwater within an aquifer or aquifers.

In surface waters, biological communities will vary depending on the physical nature of the habitat (e.g. hard or soft water, fast or slow flowing streams). Therefore in order to be able to compare like with like, a determination of the physical types of surface waters that support different biological organisms was undertaken. These physical types were developed for each of the surface-water categories (rivers, lakes, estuaries and coastal waters). Artificial water bodies and water bodies with physical modifications were assessed and a

**Table 5.2** Coordinating Local Authority and Project Websites for each RBD

Coordinating Local Authority	River Basin District	Website
Dublin City Council	Eastern	<a href="http://www.erbd.ie">www.erbd.ie</a>
Galway County Council	Western	<a href="http://www.westernrbd.ie">www.westernrbd.ie</a>
Carlow County Council	South Eastern	<a href="http://www.serbd.com">www.serbd.com</a>
Cork County Council	South Western	<a href="http://www.swrbd.ie">www.swrbd.ie</a>
Donegal County Council	North Western	<a href="http://www.nwirbd.com">www.nwirbd.com</a>
Monaghan County Council	Neagh Bann	<a href="http://www.nbirbd.com">www.nbirbd.com</a>
Limerick County Council	Shannon	<a href="http://www.shannonrbd.com">www.shannonrbd.com</a>



total of 37 HMWBs and 37 AWBs were provisionally designated. Final decisions on the designations will be made for the management plans due to be drafted in 2008.

The EPA has compiled a register of protected areas comprising areas in each RBD that have special protection under EU or national legislation, including that related to the protection of habitats and species, bathing water areas and water bodies used for drinking-water supply.

A baseline economic analysis was completed with a preliminary assessment of the value and costs associated with water resources in

Ireland. Key information gaps were identified along with a proposed strategy to address them.

In the review of the impacts of human activities on water bodies a range of pressures was assessed, including diffuse and point pollution, water abstraction and morphological pressures (e.g. physical disturbances such as impoundments and other water regulation structures). The purpose of this exercise was to identify water bodies where specific measures are required to achieve 'good water status' or prevent a deterioration in status by 2015. These measures are to be included in a formal programme as part of an RBMP to be published by 2009

and reported to the European Commission in 2010. A summary of the total number of water bodies for each water category and the risk assessment results are presented for Ireland's RBDs in Table 5.3.

Note: Where a water body is assessed as 'at risk' this does not imply that it does not currently have good water quality status, but rather that there is a risk that it may deteriorate below this level.

The analyses undertaken in this review involved gathering information on all environmental pressures likely to affect the waters concerned – not only pollutant discharges but also physical pressures such as abstractions or channel alteration and other factors such as the presence of alien species that may have impacts on the native flora and fauna. In addition, the available information on the current condition of water bodies (impact data), mainly arising from the water quality survey work of the local authorities, the EPA and the fishery agencies, was compiled. In conjunction with this information-gathering exercise, criteria and thresholds were developed for each type of pressure and impact in relation to the level of risk that these represented. This work benefited from the guidance issued at national, UK and EU levels. Diffuse pollution and morphological pressures were the most significant pressures in each RBD (Figure 5.2).

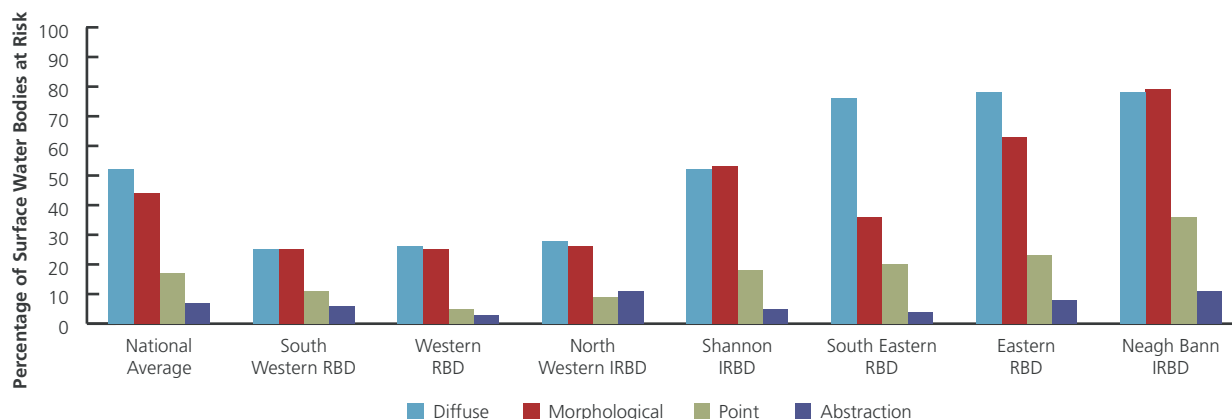
The characterisation and analysis of Ireland's RBDs has facilitated the design of the WFD monitoring programme by identifying water bodies that are at risk of failing to meet their WFD objectives. This information will also facilitate the design of measures appropriate to each water body and their prioritisation in the RBMPs.

**Table 5.3 Numbers of Water Bodies and Percentage at Risk of Failing to Meet WFD Objectives by 2015, based on the 2004 Characterisation and Analysis of Ireland's RBDs (Source: Toner *et al.*, 2005)**

Water Body Category	Total No. of Water Bodies	No. at Risk	Percentage at Risk
Groundwater	757	471	62
Rivers	4467	2854	64
Lakes (>50 ha)	210	134	64
Estuarine waters	196	104	53
Coastal waters	113	30	27



**Figure 5.2 Percentages of Surface-Water Bodies at Risk of Failing to Meet the Objectives of the WFD**  
(Source: EPA and RBDs, 2005)



## New Monitoring Programmes

The EPA published a national monitoring programme for the WFD in 2006, and monitoring of groundwater and surface-water status commenced in 2007. The aim of this programme is to establish a representative, coherent and comprehensive overview of water status within each river basin district. The programme will also assess the efficacy of any measures instituted and assist in determining the causes of any failure of particular waters to meet the quality objectives. This programme includes HMWBs, AWBs and special sub-programmes for the protected areas included in the Register of Protected Areas as defined by Article 6 of the directive. Monitoring responsibilities were assigned to several agencies, including the EPA, local authorities, Marine Institute, Fisheries Boards, Waterways Ireland, OPW and NPWS.

The present programme specifies all surface-water and groundwater monitoring activities required for the purposes of the WFD. Article 22 of the WFD provides for repeals and transitional provisions for other

specific directives. The monitoring requirements for these, plus elements of other existing programmes, are expected to be superseded by later phases of the WFD monitoring programme.

Three types of monitoring are specified and described in the directive and Common Implementation Strategy (CIS) guidance documents:

- surveillance monitoring
- operational monitoring
- investigative monitoring.

Monitoring for surface waters is more detailed than for groundwater because of the requirement to assess biological and hydro-morphological elements in the former to allow for the assignation of ecological status. Full details on the specific objectives and requirements of each type of monitoring for the individual monitoring programmes for rivers, lakes, transitional and coastal waters, groundwater, and canals are available at the EPA website ([www.epa.ie/whatwedo/wfd/monitoring](http://www.epa.ie/whatwedo/wfd/monitoring)).

## How Will the Status of Surface Waters be Determined?

Data collected in the WFD monitoring programme will be used to assess status of water bodies in each RBD. The status of surface waters is required in order to assess whether the objectives of the WFD have been met. Status in surface waters is determined through the assessment of both:

- ecological status or, in the case of artificial and heavily modified water bodies, ecological potential, and
- chemical status.

## Ecological Status/Potential

Ecological status is an expression of the quality of the structure and functioning of surface-water ecosystems and their condition relative to the natural or reference state. Each surface-water body must be classified as being in one of the five ecological classes: high, good, moderate, poor or bad status. Artificial and heavily modified water bodies also need to be classified into one of five classes, but these are



referred to as ecological potential (maximum, good, moderate, poor or bad potential) to reflect the fact their objectives will be different to natural water bodies due to their associated artificial or modified characteristics.

The WFD uses the term 'quality elements' to describe the different indicators of ecological quality that make up its ecological status classification schemes. For each surface-water category (river, lake, transitional or coastal water) there are four groups of quality elements to be considered in order to assess ecological status or ecological potential:

- biological quality elements
  - phytoplankton, other aquatic flora, benthic invertebrates and fish
- general components (physicochemical elements)
  - including oxygen, nitrate and phosphate
- relevant pollutants (Annex VIII)
  - including pesticides and some metals
- hydromorphological elements – including water flows and physical characteristics.

The WFD requires that the overall ecological status of a water body be determined by the results for the biological or physicochemical quality element with the lowest status, i.e. the element worst impacted by human activity. The WFD refers to this as the 'one out – all out' principle.

### Chemical Status

For each of the priority substances (Annex X) and certain other pollutants (Annex IX) the WFD requires a single standard that will separate the two chemical status classes 'good' and 'failing to achieve good' set out in the directive. Failure to achieve one of these standards will mean failure to achieve good chemical status.

### Overall Surface-Water Status

The lower of a water body's ecological status and chemical status determines its overall surface-water status. To achieve the overall objective of good surface-water status, a water body must achieve both good ecological and good chemical status. In the event of failing to achieve good status, the WFD requires measures to be put in

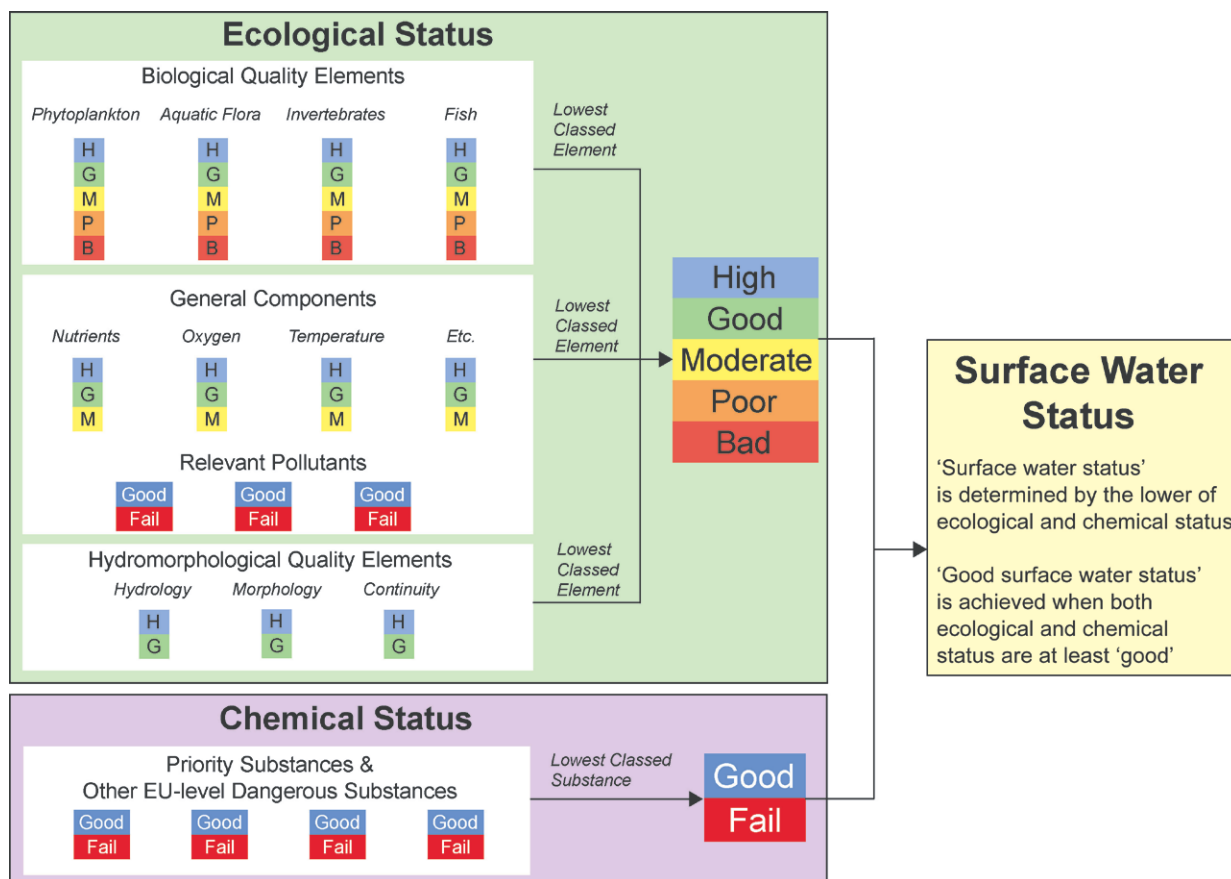
place to reduce or eliminate inputs of the polluting substance. Figure 5.3 illustrates how results for different quality elements are combined to classify ecological status, chemical status and overall surface water status. The biological quality elements must be considered for all five ecological classes. An assessment of the hydromorphological quality elements must be carried out when considering the high/good boundary. An assessment of the general component (physicochemical) quality elements must be carried out when considering the high/good and good/moderate boundaries. Standards for relevant pollutants (Annex VIII) must be met to achieve at least good status. Environmental Quality Standards are being developed for the general components, relevant pollutants, priority substances (Annex X) and other dangerous substances (Annex IX).

### New Biological Classification Systems and Environmental Quality Standards

Biological classification systems are used to assess the biological quality status of a water body using the floral and faunal communities. In the past biological status was usually expressed in defined quality classes by using simple numerical scales, e.g. the Q index for rivers. Existing classification systems used in Ireland for biological assessment did not cover the full range of biological quality elements required by the WFD. Thus, a major programme for developing new biological assessment methods and updating existing methods was required. For freshwaters, classification systems have been developed for phytoplankton and macrophytes in lakes and for invertebrates and



**Figure 5.3** Overview of How Results for Different Quality Elements are Combined to Classify Ecological Status, Chemical Status and Overall Surface Water Status



phytobenthos in rivers. For marine waters, classification systems are available for chlorophyll in coastal waters and for macroalgae in transitional and coastal waters. Work is progressing on the remaining classification systems. New assessment systems for determining hydromorphological status in surface waters are being developed and some are being tested through field trials in Ireland.

Environmental Quality Standards (EQSs), which set limits on the amounts of certain pollutants in the aquatic environment in order to protect the flora and fauna and public health, are being developed for Irish waters. The WFD identifies groups of specific relevant pollutants (Annex VIII) such as pesticides

and metals that, if discharged in significant quantities to surface waters, are required to be considered in the classification of these waters. Certain priority substances (Annex X) and other pollutants (Annex IX) have been identified in the WFD as being of significant risk to the aquatic environment. The standards for these priority substances are to be set by the EU Commission and, to date, draft standards have been issued for consideration. It has been decided to recommend these provisionally as the values that will form the basis for the Irish regulations for the priority substances.

The EPA will provisionally classify surface-water bodies in the RBMPs according to the forthcoming surface-water environmental

objectives regulation by applying the available classification systems and EQS values to the initial monitoring results.

### How Will the Status of Groundwaters be Determined?

Groundwater bodies will be classified using two parameters:

- quantitative status (good or poor depending on the groundwater level regime)
- chemical status (good or poor depending on the conductivity and concentrations of pollutants).

Included in these objectives is the need to protect associated surface waters and wetlands that are



dependent on groundwater. The new Groundwater Directive (2006/118/EC) provides the detail on the means by which the WFD requirements to prevent and control groundwater pollution and to reverse significant trends in pollutants are met. This directive is required to be transposed into national legislation in 2009. In the assessment of chemical status the Groundwater Directive sets out prescribed standards for nitrates and pesticides. The EPA may set different threshold values for other parameters for each groundwater body, taking account of natural background levels. They can be established at national, RBD or water body level. If the threshold values are exceeded, then an investigation is triggered to confirm whether the groundwater body is at good status. Guidance on classification tests is being developed for Ireland and the UK through the Groundwater Task Team of UKTAG.

### Role of Research

The WFD is an ambitious and innovative piece of legislation. It

requires new scientific knowledge and the development of new monitoring, recording and reporting techniques across Europe. Implementation of the directive requires a large amount of information on the aquatic environment, particularly on biological aspects, as well as the consideration of new approaches to assessment. The research programme of the EPA has been a key vehicle for organising and funding research in support of the WFD. Areas covered by the research projects and fellowships include lake and river ecology, morphological condition in rivers, characterising unpolluted groundwater, the identification of water-dependent conservation areas and mathematical modelling for decision support tools. The current Science, Technology, Research & Innovation for the Environment (STRIVE) Programme 2007–2013 continues to support WFD implementation through its annual calls for research proposals. Further information on the EPA research programme is available at [www.epa.ie/EnvironmentalResearch](http://www.epa.ie/EnvironmentalResearch).

### Environmental Data Exchange Network (EDEN) – Reporting Information on the WFD

The WFD will result in a multitude of data streams, which must be captured in a coherent and systematic way to facilitate their timely delivery for assessment and action in the river basin planning cycle. The EPA and local authorities, with support from the Local Government Computer Services Board, are preparing for the major shift in reporting from the current situation (mixture of paper-based and computer-based reporting streams) to a fully integrated and seamless electronic system. Central to this strategy is the development within Ireland of an Environmental Data Exchange Network (EDEN). The objective of EDEN is to promote the use of common standards and eliminate the difficulties encountered in the sharing and reporting of environmental data sourced from a wide range of environmental datasets, applications, and IT systems in place within the many organisations involved in work related to the WFD.

EDEN is a centralised information exchange for environmental monitoring data. It provides the ability to submit environmental data remotely and to exchange these data with all parties authorised for environmental monitoring. Individual agencies may use their Laboratory Information Management System (LIMS) of choice while also supporting and encouraging exchange of environmental data between other agencies and systems.

The data collected will continue to be used in national level reporting – State of Environment reporting, Water Indicator reports, Water Quality in Ireland reports and so



on – and will also form the basis for onward reporting of data to European and other institutions such as the European Environment Agency, European Commission, Eurostat and OECD. The collection and management of data is also being harmonised at a European level through WISE (Water Information System for Europe). This initiative aims to collect and report data to meet the requirements of all water-related directives such as the WFD, Urban Waste Water Directive, Bathing Water Directive, and Drinking Water Directive. WISE is the water element of the European Shared Environmental Information System (SEIS). SEIS is a collaborative initiative of European and national bodies to establish a distributed and sustained environmental information system, to promote the use of standards, and to improve accessibility and sharing of data and information for public policy-makers and European citizens. Establishing EDEN places Ireland in an improved position to meet the needs of the WISE and SEIS systems and to ensure that data standards and data exchange mechanisms are as harmonised as possible in order to ensure streamlined reporting of data in the future.

### Public Participation in River Basin Planning

There is a very specific requirement that the public be consulted in the implementation of the WFD, in particular during the preparation of the management plans. To this end, the RBDs must make relevant information available to the public in a timely manner, thereby facilitating commentary and consultation. The Commission must also be kept informed of the implementation of the directive and must, in particular, receive copies of the management

plans and monitoring programmes as well as summaries of the reports on characterisation.

Irish WFD Regulations and an amendment published in 2005 (SI 413 of 2005) required the establishment of River Basin District Advisory Councils. The advisory councils provide a formal mechanism to facilitate public participation in the making of the RBMP and in establishing the programme of measures. They are composed of key stakeholder groups, including: elected representatives from the local authorities in the river basin district, business, environmental non-governmental organisations, recreational water users (e.g. angling

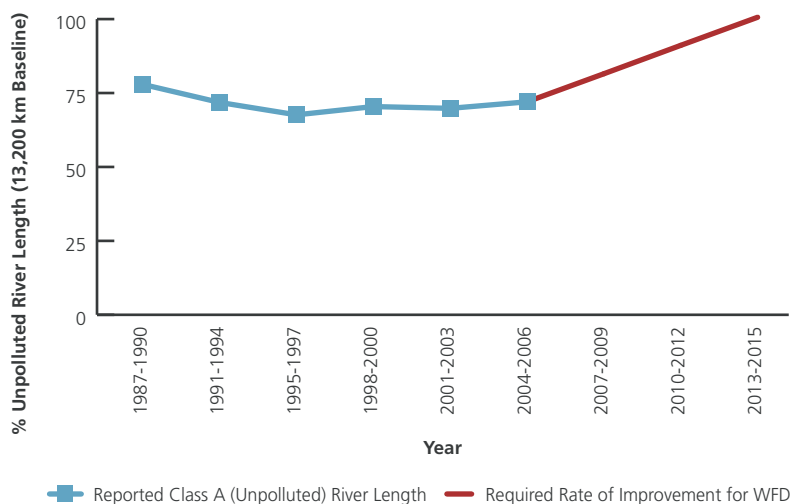
and boating groups), citizen groups and educational groups. When preparing and adopting RBMPs and their programmes of measures, local authorities must have regard to the advice and recommendations of the council for the relevant river basin district.

The relevant local authorities for each RBD published a timetable and work programme for the production of an RBMP in June 2006. A booklet titled *Water Matters* outlining the significant water management issues was published for each RBD in June 2007. This is available from each RBD website and forms the basis for consultation on the forthcoming RBMPs.





**Figure 5.4** Current Rate of Improvement of Water Quality in Irish Rivers, and Rate Required to Meet the Objective of 'Good' Status under the WFD by 2015 (Source: Lucey, 2007)



### Challenges to Meeting the Objectives of the WFD

Achieving the targets set in the WFD is the primary challenge that Ireland faces over the next decade in water resource management. The directive sets a target of achieving 'good' status for all waters by 2015. The quality of all waters in Ireland does not currently meet this objective. Progress has been made in reducing emissions to the water

environment. The decline in the percentage of unpolluted river length appears to have been halted and the most recent assessment (Lucey, 2007) showed that there has been a slight improvement (see Figure 5.4). However, major efforts in river basin management are required to ensure that the objective of 'good' status for all water bodies is achieved. If we are to meet the 2015 objectives and those of subsequent river basin management cycles, river basin planning in Ireland will need focused

efforts to ensure that the rate of improvement in the quality status of our waters is increased.

### River Basin Planning

The WFD adopts a river basin management cycle approach recurring every six years to allow for improved assessment methodologies and the further development of river basin plans. The relevant local authorities must act jointly to make a RBMP and to establish management measures for each river basin district. Local authorities are obliged to prepare an RBMP containing the details as set out in Annex VII of the directive as a minimum. Practical guidance is being developed by the DEHLG to support the development of the first RBMPs.

A key element of the RBMPs will be a set of management measures, referred to in the directive as 'programmes of measures', which are designed to address the significant water management issues in each river basin. The objectives of the WFD will only be met through the full and effective implementation of these management measures. Some measures will be required in all cases (i.e. 'basic measures'); others (i.e. 'supplementary measures') may be required in particular cases. Examples of 'basic measures' include actions required under the Nitrates Directive (Nitrates Action Plan), the Urban Waste Water Treatment Directive and the Integrated Pollution Prevention Control Directive. These measures are legally binding through various statutory instruments and must be implemented in full for all water bodies. In certain other cases at water body or groups of water bodies level, 'basic measures' may not be sufficient to achieve the objectives of the WFD. In such cases 'supplementary measures' will need



to be identified and considered. The mix of 'supplementary measures' chosen will be based on the most cost-effective combination and may include, but will not be limited to, local by-laws, wetland restoration or more stringent emission controls.

While the competent authorities responsible for the river basin planning process are local authorities and the EPA, general duties are assigned to all public authorities under the Water Policy regulations (SI 722 of 2003). Each public authority must exercise its functions in a manner that is consistent with and contributes to achieving the objectives of RBMPs. A multiplicity of existing plans and programmes relevant to water protection are operated by an array of public authorities, including the water pollution reduction plans and programmes specified under the Shellfish Waters Directive, Bathing Water Directive, Water Services Act, and so on. These plans and programmes must be integrated in a coherent way with RBMPs to ensure that objectives are met.

So far WFD implementation has focused on the characterisation of all water bodies, the setting up of monitoring programmes, the development of classification schemes and the identification of significant water management issues, which will underpin the first RBMPs. Efforts are continuing on setting environmental objectives and developing the programmes of measures that will be required to implement each plan and meet its objectives by 2015. Subsequent RBMPs will include a review of significant water management issues, an assessment of progress made to achieve the environmental objectives, and a summary of any changes to plans. The EPA, working with other

public authorities, will ensure that the RBMPs are implemented and the programmes of measures effectively enforced during each river basin planning cycle.

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