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National Development Plan 2007 - 2013

western river basin district

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water matters

*"Have **your** say!"*

western river basin district

water matters

Invitation to comment

You are invited to give your views on the implementation of **the EU Water Framework Directive** in the **Western River Basin District**. This booklet says what the Directive requires us to do and how we are working together to implement it. It summarises the main issues identified to date and outlines proposals for dealing with them. Similar booklets have been produced for the seven other River Basin Districts in Ireland and Northern Ireland.

The Water Framework Directive (WFD) was adopted in 2000; it requires governments to take a new approach to managing all their waters: rivers, lakes, groundwater, estuaries and coastal waters. Member States must ensure that their waters achieve at least **good status** by 2015 and that status doesn't deteriorate in any waters. To achieve good status and preserve our best waters, it will be necessary to prepare and implement **management plans** for our waters.

While work on the Directive requires a considerable amount of technical expertise, it also requires the knowledge, understanding and views of people who use water in their everyday lives, whether they're drinking it, fishing in it, feeding cattle with it, swimming in it, using it in manufacturing or power generation or even just walking the dog beside it. The Directive is not just about the environment: an economic analysis of water uses is an essential part of the process. This booklet lists the main uses and activities that may be affected by the management plans. Again, users' knowledge and understanding can help ensure that all the implications for people and the economy are considered.

That's why your views are being sought. You don't have to read the whole of this booklet (unless you want to) because, after a background section at the start, it is divided up into topics, and you can read just the topics you're interested in. At the end, there's a section about the next steps in the Water Framework Directive process, and some suggestions if you want more information.

This is how the booklet is structured

Your views

We would like you to read this booklet and let us have your comments.

For each of the most important water-related issues, the booklet sets out:

- Background information showing the extent of each issue and the way that it can cause water problems
- A summary of existing controls and an assessment of their adequacy
- The proposed actions, the parties responsible for taking those actions and the users who would be affected.

We are interested in receiving your comments on whether we have identified the most important issues, whether we have overlooked any significant issues and what you think about the proposed actions.

We will be consulting for six months on the water-related issues and suggested actions contained in this booklet. We will gladly accept your comments up until 22 December 2007. Early responses would be appreciated to allow more time to clarify and resolve issues that may arise.

This booklet is issued jointly by the seven local authorities involved in the Western River Basin District, You can send comments to: Clare, Galway City, Galway County, Leitrim, Mayo, Roscommon and Sligo County Councils.

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We will comply with data protection requirements and will use information that you provide to compile a digest of responses. Please let us know if you wish your response to remain anonymous and we will include your comments in the digest without saying who made them. If you want to add new comments or information you can contact our website at any stage (www.westernrbd.ie).

The next10 pages in this booklet will provide some background information on water problems, the Water Framework Directive and the Western River Basin district.

The Western River Basin District

Western River Basin District.
Image courtesy of Stephen Henderson, RPS Group

Background: the WFD story so far

All the Member States of the European Union are moving towards **River Basin Management Planning** in accordance with the Water Framework Directive. The Directive aims to provide a new, strengthened system for the protection and improvement of water resources and water-dependent ecosystems. It aims at preventing any deterioration in the existing status of waters, including the maintenance of "high status" where it exists, and at ensuring that all waters achieve at least "good status" by 2015.

Western River Basin District

The Directive requires Member States to identify river basins (or catchments) within its territory and to assign these to **River Basin Districts** (RBDs), which will serve as the "administrative areas" for co-ordinated water management. A cross-border basin covering the territory of more than one Member State must be assigned to an "**International RBD**". Some 400 river basins on the whole island of Ireland have been grouped and assigned to a total of eight RBDs. One of these RBDs lies wholly in Northern Ireland, four lie wholly in Ireland and three are International RBDs.
The Western River Basin District encompasses most of counties Galway, Mayo, Sligo parts of Leitrim, Roscommon and Clare and includes all of Galway City. This booklet is issued jointly by the seven local authorities involved.

A New Approach to Managing Our Waters

The Water Framework Directive takes a new approach to managing waters. This approach is distinctive in several ways, but perhaps the most important are:

- Its comprehensive, all-encompassing view of the water environment

- Its structured approach: find out the facts, decide which of them need action, make a management plan and carry out the plan.

A comprehensive view

There is a wide range of existing legislation that contributes to the protection of our waters; we have not listed it all in this booklet but if you are interested you can find a summary of relevant legislation at www.westernrbd.ie. It includes existing directives, daughter directives and measures to reduce pollution, for example the Urban Wastewater Treatment, Nitrates, Bathing Waters, Shellfish, Habitats and Dangerous Substances Directives. The Water Framework Directive encompasses all of this legislation. These controls are already being implemented in Ireland; however, the challenge is to coordinate these controls for optimum effect.
The comprehensive view also applies to human activities: if they affect the water environment, they have to be taken into account.

A structured approach

The first phase of the Water Framework Directive is being implemented, up to 2015, and there will be further phases to follow.
Much work has gone into finding out the facts: identifying all the waters in each district, finding out their current status and condition, listing the uses made of the waters and the pressures on them. That work is continuing, but there is enough information at this stage to put the preliminary findings in this booklet and ask the general public to comment on them.
That is what this booklet is about. It is a preliminary overview of our main water related issues and the actions suggested to address these issues. You are being asked to help by checking this overview and making comments to correct or improve the listing of issues and suggested actions.
The relevant authorities are required to adopt a **River Basin Management Plan**. A draft plan will be issued in 2008, and you will have a further opportunity to comment at that stage. The final version of the plan will be published by the end of 2009. The plan will identify the specific environmental objectives to be achieved by the end of 2015 and the programme of measures, which are the actions that will be taken to achieve them.
In effect, this booklet is an outline of the proposed plan; if you're interested in or likely to be affected by the plan, **now is an opportunity to speak.**

Why water matters

Water sustains life. The water on our planet flows in a constant cycle, driven by heat from the sun. Rainfall and melted snow seep underground to become **groundwater,** which emerges as springs feeding rivers. Rivers drain land from mountainous uplands, passing through lakes on a meandering journey to estuaries and the sea. These waters provide the variety of habitats that aquatic plants and animals need.
Water is essential for life. Humans need it for drinking and food preparation. It is also vital to our natural environment, supporting plants and animals. Water is critical to our economy, generating and sustaining wealth through activities such as agriculture, commercial fishing, power generation, industry, services, transport and tourism. However, water is a fragile resource that needs to be protected.
The area of land that a river drains is called its catchment or **basin**. The basin contains all surface waters (rivers, canals, lakes, reservoirs, estuaries and coastal waters) and the underground waters (groundwaters), together with the lands that drain into them. Our environment is not bounded by political borders, although the responsibilities for managing waters are. The cumulative effect of urban discharges in the Mask, Corrib catchments (for example as far inland as Ballinrobe and Tuam) can contribute to pollution problems in the Corrib Estuary. **River basin districts**, containing adjacent basins, are the natural unit to manage our waters.

The Water Cycle

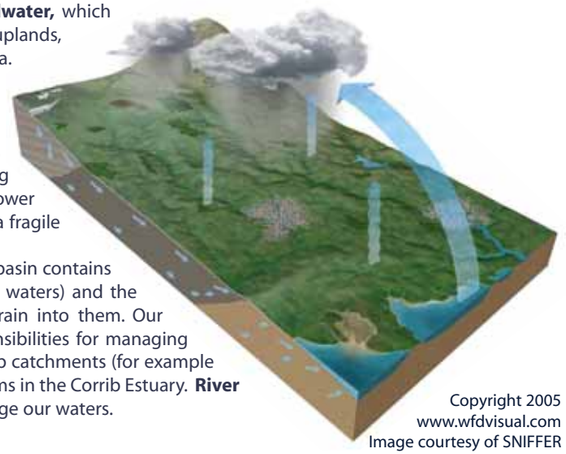


Image courtesy of SNIFFER

Water goals

Waters must be of sufficient quantity and satisfactory quality to protect our aquatic environment and beneficial uses.

Many of our waters are still healthy and the first challenge is to take action to preserve their status.
Unfortunately, there are also cases of waters choked with weeds and algae, and more severe incidents of fish-kills or contaminated drinking waters. Abstracting too much water can cause very low water levels in dry weather. Our challenge in these cases is to take action to restore

Salmon fishing in the River Moy in Mayo
Photo courtesy of Declan Cooke NWRFB

such areas to their natural healthy state.
So there are two main tasks to be undertaken:

- where waters are **high or good status**, manage them so they stay that way
- where they are less than **good status**, manage them so that they improve to at least good status.

The quality of our waters will soon be classified against new water quality standards which are being developed by environmental agencies. Actions will be set out within the management plans to ensure that waters meet these new standards.

Human activity and impacts on water

Over 4.2 million people live in Ireland, 1.6 million of them in the greater Dublin area. Generally, the east of the island, with its urban areas and fertile soils, is more densely populated than the west. . Over 400,000 people live within the Western River Basin District.
By 2021 there may be an additional one million people living in Ireland, partly because the strength of the economy has attracted inward migration. Large multi-national corporations have been attracted too: they have invested in Ireland because they value the island's competitive location, well managed and stable economies and the highly educated workforce.
Ireland's economy has experienced unprecedented economic growth since the early 1990's. Traditionally based around agriculture, particularly livestock farming, it is now dominated by services and industry, with significant exports of electronics and pharmaceuticals. There has also been expansion in other sectors: construction and consumer spending have increased and tourism, and along with recreational fishing and golf holidays they are now a major growth industry nationally. However, a significant decline in recreational fishing in recent years has been identified in the West.

Our waters have been affected by these changes:

- More people and increased household water usage require bigger water supply schemes and produce larger volumes of wastewater to treat and dispose of
- Demand for more food and industrial goods leads to more intensive or expanded activities with higher water demand and pollution threats
- Additional homes mean the spread of urban areas and an increase in rural housing, with the associated threat of more water

pollution. Building developments may necessitate more flood control works
- Ports handling more exports and imports mean busy shipping routes and demand for port expansion.

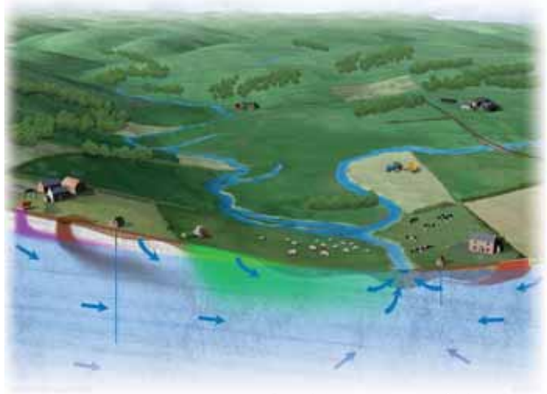
Recent monitoring of Ireland's waters has detected the first signs of a reversal of the downward trend in water quality: this improvement results from investment and improved working practices. It is vital for our water environment, and the economy that depends on it, that recovery continues. We must take practical action to balance our demands so that all our waters are in a healthy state:

- So that drinking water sources are sufficiently protected to guarantee quality of supply
- So that we have enough water to sustain commercial use
- So that our native aquatic plant and animal communities are protected
- So that our waters can be used for recreation and tourism.

Common water problems

Perhaps the most common environmental water problem is **pollution**, which can threaten all parts of the water cycle from groundwaters to rivers, lakes, estuaries and coastal waters. Pollution means that there is too much of a harmful substance in the water: for example a poisonous metal or pesticide, a nutrient that causes excessive growth of weeds, or even silt that can smother fish spawning beds.
Pollution can arise from two types of sources:

- Local **point** sources, for example pipes discharging effluents from industries, wastewater treatment plants, urban areas or mines.
- Widespread **diffuse** pollution sources, such as land use activities like farming, forestry or septic tanks.



Copyright 2005. www.wfdvisual.com
Image courtesy of SNIFFER

The effect of **physical modifications** on waterways is of growing concern. Waters are modified so we can make particular use of them. Examples include:

- Drainage of lands for development, agriculture, forestry or peat extraction
- Construction of flood defences or weirs to control river water levels
- Damming of lakes to provide storage for power generation or water supply
- Port developments or construction of coastal defences to prevent flooding or erosion.

These engineered modifications can either directly remove habitat or indirectly change the natural structure or flow of our waterways. This may mean a reduction in biodiversity, loss of rare or endangered habitats and species or depletion of valuable fish stocks.

Abstraction of unsustainable amounts of water is another potential problem for both underground and surface water resources. If we remove too much water for drinking or commercial purposes, we reduce an ecosystem's ability to function. In extreme cases we can dry up river beds or lake shores, or even cause salt water to be drawn into the water beneath our coastal rocks.
Our water environment is also facing other threats. One example of an emerging issue is the spread of invasive alien species, such as the zebra mussel. These are non-native aquatic plants or animals that can displace and upset the natural balance of our native species.

The Western River Basin District and its waters

The Western River Basin District is one of Ireland's largest river basin districts, covering about one fifth of the country with a land area of nearly 12,000 km2, a coastline of some 2,700 km and a further 4,683 km2 of marine waters. Over 400,000 people live in the district and this population is growing every year.

The Western River Basin encompasses parts of counties Galway, Mayo, Sligo and Leitrim, small parts of counties Clare and Roscommon and also includes Galway City. Offshore islands such as the Aran Islands, Inishboffin, Clare Island and Achill Island are also included in the basin.

The major river catchments include the Corrib, Moy, Ballysadare, Dunkellin and Bonet rivers but there are also many smaller catchments along the coastline.

The Western River Basin is rich in lakes with over 5600 lakes ranging in size from less than 1 hectare to 165 km2(Lough Corrib). It includes many of the country's larger lakes such as the Great Western Lakes; Corrib, Mask, Carra and Lough Conn,

Marine waters include the Corrib estuary into which the Carra, Mask, Corrib system flows into the sea at the Corrib estuary. The Moy flows into the sea at Killala Bay. The basin contains all of Galway and Mayo's coastline; almost all of Sligo's and the Clare coast to Blackhead and extends out beyond the islands, encompassing a large sea area.

Groundwaters include several important aquifers (water-bearing rocks) in the eastern part of the basin mainly limestones underlying the lowland areas. Groundwater is an important source of drinking water but also makes an important contribution to river flows and lake levels.

The region has seen the population grow by 16% in the last ten years with much of this in rural areas and with the largest urban centre, Galway City, experiencing a growth rate of over 25%. The growing population is placing an increased demand on water resources and wastewater treatment needs and developmental pressure is increasing in the basin. The proliferation of rural and coastal housing using either individual treatment systems or in cluster groups is giving rise to water protection issues and is a cause for concern.

Agriculture predominates in the eastern part of the basin and is mainly pasture and some tillage, with industry concentrated in major cities and towns. The extensive mountain and peatland areas to the west provide natural habitats and large areas are designated as protected areas. Forestry in the area is an important contributor to the timber sector in Ireland. The extensive coastline and sea area provide for significant sea fishery and aquaculture activity such as native oyster production and farmed salmon and trout and areas such as Kilkierin Bay, Killary Harbour and Clew bay are designated sensitive shellfish growing areas. The great natural beauty of the basin is a haven for a thriving tourist industry with many popular holiday resorts. In particular the Moy River is renowned internationally as a salmon fishery and is closely followed by the Corrib, Mask and Conn lake systems, which provide major boating and fishing interests.

Salmon Weir, Corrib River, Galway.

All of the activities in the district have the potential to impact our waters and therefore must be managed sustainably. Growing population around towns and villages is putting increasing pressure on the systems that treat wastewater and deliver drinking water. Anxiety has been expressed by anglers about the water level in Lough Corrib and the impact of low water levels on navigation. Management of the water level in Lough Corrib could potentially impact on Galway City in the absence of flood defence systems and on leisure uses on the river.

Our special areas

While all of our waters are important, some areas require greater protection because they contain rare and vulnerable habitats or wildlife. Research is being carried out to determine how best to protect these areas and their wildlife. Other areas are sensitive because of their beneficial uses or the need to protect human health. They include drinking water sources, shellfish growing areas and bathing areas, where we must guard against bacteria such as salmonella, viruses and parasites such as Cryptosporidium.

Mayo Coastline
Photo courtesy Mayo County Council

All of the areas requiring special protection in the Western river basin have been identified and mapped and are listed in a register (see www.westernrbd.ie). They include sections of rivers, lakes, estuaries, coastal areas, bogs, woodlands and grasslands. Parts of the Corrib, Carra and Mask lakes and the Moy river have been identified as have coastal areas such as Black Head, parts of Galway Bay, Kilkieran Bay, Clew Bay, Blacksod Bay, Broadhaven Bay, part of Killala Bay and Ballysadare Bay. Large areas of Connemara have been identified for nature protection, as have the turloughs at Rahasane and Coole.

The causes of our local water problems

There is a wealth of knowledge available about our waters in national water quality reports, academic research and investigations. In 2004 all available information was investigated to identify the district's main problems: those that are widespread and those that pose the greatest threat of damage to our water environment. The analysis (see Summary Characterisation Report www.westernrbd.ie) identified these potential problems.

Rivers: many rivers are under threat from diffuse and point source pollution, as well as physical modifications. A smaller number of rivers suffer from over-abstraction. Main rivers in the eastern part of the basin are more impacted than upland rivers in the western part of the basin area.

Lakes: again diffuse and point source pollution and physical modifications are key problems for our lakes. All of the Great Western Lakes, which include Corrib, Mask, Carra and others such as Conn and Carrowmore are under increasing pressure from pollution and are identified as being at serious risk of not achieving water quality standards. In contrast the myriad of smaller lakes in the western area are less likely to be impacted. Abstraction affects a small number of lakes.

Marine waters: physical changes and pollution coming from the district upstream threaten many of our estuarine and coastal waters. Although our open coastal waters are of good quality a number of bays and estuaries show signs of pollution.

Groundwaters: diffuse pollution is the key influence on our underground waters. This influence is seen more in the eastern part of the basin where rock is of a more porous nature and is overlain by thin soils. A few localised areas are affected by point source pollution or over-abstraction.

River Moy
Photo courtesy Cycleau Project.

Using local expertise

The Directive requires the involvement of a very wide range of public bodies, which are mentioned throughout this booklet. Seven local authorities are co-operating with other organisations through the Western River Basin District Management Group, which is referred to as the **management group** throughout this booklet.

To encourage the public to participate in making and implementing action plans, a special stakeholder group called the Advisory Council has been established in the Western River Basin District: its members are councillors, community representatives, scientists and stakeholders. This **participation group** has already contributed knowledge, expertise and views that have helped in preparing this booklet. A full list of participants is available on www.westernrbd.ie and also at the back of this booklet.

Local workshops and meetings were held with the district's participation and management groups to debate the main issues and help to shape this booklet. The Western River Basin District Advisory Council met on seven occasions since it was established in May 2006. Presentations were made to the general public and interest groups throughout the river basin district and public awareness materials were distributed. Contributions were made to major water quality conferences. The main water problems and water management issues identified in the Western River Basin District are:

Enrichment of lakes and rivers

- Many references were made to the deteriorating quality of the major lakes of Corrib, Mask, Conn, Carra and Carrowmore where some algal blooms have been observed.

Pollution from sewage discharges and point sources

- Poor maintenance of existing sewage treatment facilities, lack of adequate treatment for some coastal discharges and development pressure exceeding infrastructure development were cited as causes of concern.

Diffuse Sources

- The impact of agricultural activities on water quality was raised as an issue.
- Wastewater from unsewered properties was seen as a major cause for concern given the increasing population growth around towns and villages on single house systems.
- Forestry activities were also raised as an issue in sensitive catchments.

Physical modifications

- Changes to the physical structure of rivers and maintenance of drainage systems was also seen as a cause for concern.

Protecting drinking water sources

- Pollution of water supplies was identified as an issue of major concern in the Western River Basin District.

Invasive Alien Species

- The increasing spread of alien species such as the zebra mussel and the curly leaf pondweed on the western lakes were identified as emerging water quality concerns.

Flooding

- Flooding and flood relief related to development on flood plains and the need for flood protection measures gave rise to concerns.
- Management of floodwaters was identified as an important issue.

Question 1

Do you agree that these are the key causes of water problems within the Western River Basin District?

Positive Steps

As you read earlier, recent monitoring in Ireland has detected the first signs of a reversal of the downward trend: this improvement results from investment and improved working practices. It is vital for our water environment, and the economy that depends on it, that recovery continues. The public participation and management groups highlighted some areas where significant progress has been made:

- The recent Nitrates Action Programmes will play a major role in addressing agricultural pollution
- County groundwater protection schemes will serve as a planning control tool, particularly for unsewered areas
- Continued investment in wastewater treatment infrastructure, such as the Mutton Island plant serving Galway City leading to improved water quality and restoration of Blue Flag status to Salthill beach
- Use of new technologies in developments such as sustainable drainage schemes, constructed wetlands, silt ponds and riparian zone protection
- Education campaigns like the Green Schools programme and those championed by the Zebra Mussel Control Initiative Group, which promotes water awareness amongst anglers and other beneficial users.

And there is more good news in that the government authorities in Ireland have so far successfully met all the Water Framework Directive's early milestones and are among the EU Member States showing the highest level of compliance with the Directive to date. So progress is possible: we can tackle the issues and manage our waters.

Planning our actions

It is time to think, plan and act to protect our waters. We have a legal obligation to comply with the Water Framework Directive, but more importantly if we do not meet this challenge we will have failed ourselves and future generations.

Actions needed to protect waters will be prescribed in **river basin management plans**. The first plans, for the period 2009–2015, will address our main water issues with second and third plans, for the periods 2015–2021 and 2021–2027, which will address any remaining issues or any new issues that may arise.

Our activities must be sustainable, so that we protect our waters while continuing to enjoy economic development. The necessary changes will not just affect public authorities and industry; they will also apply to every individual. Everything that we do from washing dishes to fertilising gardens has a consequence for our waters.

Emerging and changing issues

The first management plans will address the district's main water issues. But what if we have missed something, or some new issue emerges before 2015?

New issues will emerge and the importance of existing issues will change along with economic and social changes driven by population growth, development demand and land use change. Climate change impacts may be complex and hard to predict. Heavier winter rainstorms may cause more flooding, raising demand for flood controls. Summer droughts could increase abstractions and reduce the amount of water into which effluents discharge, making pollution more likely. Increased temperatures in waters may stimulate the spread of alien species. These impacts will have to be reviewed during preparation of the plan.

A series of special studies is being carried out to update information and improve the understanding of our water issues. Local information from catchment plans, assessments and sampling programmes is being used to focus on the main problems in the Western River Basin District. Study highlights are presented in this booklet, but the detailed findings of the in-depth studies are available on the district's website www.westernrbd.ie.

Action themes

The Western River Basin public participation and management groups recommended the following action themes to overcome shortcomings in current water management:

- Joined-up thinking: for instance, ensuring that development plans and infrastructure upgrades are in place before new development is allowed
- More resources to improve response to water problems
- Use of economic tools or grants as incentives
- Education and awareness campaigns
- Keeping water on the political agenda.

Question 2

What is your view about these suggested action themes?

Have we missed something that would be helpful within the Western River Basin District?

Wastewater and industrial discharges

In urban areas wastewater from homes and industrial or commercial sources is collected and carried in public sewers to treatment plants, where many of the pollutants are removed. The sewers also drain storm water from urban areas including roads, roofs and recreational areas. The level of treatment is determined by the size of the population being served and the sensitivity of the receiving waters. The treated wastewater or **effluent** is discharged through an outfall pipe to our rivers, lakes, marine waters or, occasionally, to groundwater.

Ireland has 540 sewerage systems serving populations of between 500 and 1.7 million: 408 modern municipal treatment facilities and 132 smaller plants providing minimal or no treatment. Many of these smaller schemes are located on the coastline. In the Western Basin District, 53 systems serve populations of more than 500 people, of these nine have full nutrient removal and 28 have secondary treatment, the rest have either preliminary or no treatment.

Between 2000 and 2006 authorities in Ireland invested almost €3 billion to upgrade 210 wastewater treatment plants. Local authorities have built over 90% of the infrastructure needed to comply with the Urban Wastewater Treatment Directive. Extra investment will be needed to keep pace with population and economic growth; urban drainage must also cope with increased surface water run-off. An additional €2.5 billion may be invested in wastewater treatment under the National Development Plan 2007–2013. Major schemes have been completed in Galway City and Loughrea.

Major industrial activities are regulated by the Environmental Protection Agency (EPA), which has granted some 600 industrial licences. Local authorities have licensed 1,090 small-scale commercial and industrial discharges to the sewer system and 1,120 direct discharges to waters.

How can wastewater and industrial discharges cause water problems?

Inadequately treated effluents can lead to unacceptable levels of pollutants (nutrients, bacteria, parasites, organic materials or dangerous substances) in receiving waters. These pollutants can damage water quality and downstream uses (for example bathing waters, shellfish waters or waters supporting sensitive species). The amount of dilution available is an important factor: a discharge from a small village into a large river may pose no threat to water quality, whereas a discharge from a larger town may cause significant quality deterioration in the receiving waters if the level of treatment is not adequate.

Spills to surface waters from sewerage networks, from storm overflows for example, release untreated wastewater and storm water, which can have nutrients, bacteria, parasites, organic materials and dangerous substances from homes and industries, metals and hydrocarbons from vehicle exhausts and run-off from roads, pesticides from parks, golf-courses and gardens. Leaking of pollutants from underground sewers and tanks can threaten groundwaters and surface waters.

In the Western River Basin District, estimates indicate that municipal and industrial discharges produce over 16% of the yearly phosphorus load and 3.5% of the nitrogen load. There have been cases of rivers and coastal areas (such as Galway City) that have been seriously polluted by this type of discharge and in response facility improvements are being put in place in many urban areas. More investment is needed to ensure that treatment plants can cater for the unprecedented growing demands in the basin, both through upgrading and the provision of new facilities as required. The potential impacts of combined sewer overflow spillage and run-off from road networks were also highlighted as water problems by the Western River Basin management group and participation groups.

What existing controls are in place?

The Urban Wastewater Treatment Regulations require local authorities to provide appropriate wastewater treatment for urban areas. Local authorities must obtain planning approval from An Bord Pleanála under the Planning and Development Act for large wastewater treatment plants (exceeding 10,000 persons equivalent). Under the Foreshore Acts, the Minister for the Marine may license local authorities to place sewage disposal pipes on or near the foreshore.

Local authorities are obliged to monitor inflowing wastewater and effluent at treatment plants. The Urban Wastewater Treatment Regulations' monitoring and sampling requirements are set out in the Environmental Protection Agency's Handbook for Local Authorities and reports on Urban Wastewater Discharges in Ireland.

The Environmental Protection Agency (EPA) regulates major **industrial activities** under the Integrated Pollution Prevention and Control (IPPC) Regulations. Local authorities license small-scale commercial and industrial discharges to sewer systems and waters under the Water Pollution Acts. Industrial discharge controls lay down effluent quality and quantity conditions.

The EPA and local authorities are responsible for addressing water pollution from **spills or leakage** under the EPA and Water Pollution Acts. **The Phosphorus Regulations and Dangerous Substances Regulations** require local authorities to control activities that may cause pollution. Specific Bye-laws have been made in priority areas to control **urban discharges**. Local authorities in the Western River Basin have carried out significant reviews of licenses issued under the Water Pollution Act. Many local authorities have adopted **Sustainable Drainage Systems (SuDS),** which control the quantity and quality of run-off waters by providing storage in tanks, swales or ponds. This delays or prevents discharge to streams or rivers until there is capacity to accommodate it or until it can be diverted to a treatment plant. Other agencies have also introduced controls: for example the National Roads Authority has a strategy for dealing with water quality considerations of **road development**.

Are these controls adequate to meet the new targets?

Controls focus on infrastructure provision but may not adequately control the operation of wastewater treatment plants and sewage facilities. Local authorities are currently exempted from licensing requirements under the Water Pollution Acts. There are very few controls on the pollutant loads from spills and leakage of drainage systems. To meet new and more demanding water quality standards, a system of authorisation or licensing is required.

Urban Wastewater Treatment plant
Image courtesy of WYG

Environmental Protection Agency reports on Urban Wastewater Discharges have consistently highlighted the need to improve monitoring at treatment plants. A recent study indicated that there is a shortfall of reliable monitoring data or results. This too needs to be addressed.

What additional actions are proposed?

The Department of the Environment, Heritage and Local Government (DEHLG) is making new regulations to address the deficiencies in existing controls. The regulations will create a single national licensing system for the operation of local authority wastewater discharges and sewage facilities such as pumping stations and overflows. The system will be administered by the EPA. The licences will set mandatory emission limits for pollutants to achieve new water quality standards in receiving waters and will specify monitoring requirements.

Industrial licence conditions will have to be reviewed and revised to ensure that adequate controls and emission limits are set to achieve new water quality standards in receiving waters. This will require minor changes to licences issued by the EPA and local authorities.

Detailed studies are under way to support the review of the licensing system and address urban spills. These studies cover the identification of the pollutants discharged in effluent, the pollutant limits to be set in licence conditions and best practice in spreading the sludge from treatment processes on agricultural land. A computerised web-based system will provide better access to monitoring information and improve the management of wastewater treatment plants. Education and awareness-raising programmes will also be provided.

These proposed actions will result in stricter controls on existing and planned wastewater and industrial discharges to waters. Stakeholders directly affected by these proposed measures include local authorities, transport authorities and industries discharging wastewater effluent to sewers or directly to waters.

Question 3

What is your view about the suggested actions to control wastewater and industrial discharge problems within the Western River Basin District?

Are these actions appropriate?

Have we missed something important?

?

Landfills, quarries, mines and contaminated lands

Waste disposal sites (including old un-lined landfills), quarries, mines, gasworks sites and industrial lands produce lesser discharges to waters than wastewater plants and industries, but residues or waste products from previous activities may have seeped into the ground and may continue to threaten groundwater and surface waters. In the Western River Basin some 52 closed landfills have been identified.

Our knowledge of these sites is incomplete and needs updating to assess the scale of this problem. We have good records of today's engineered landfills but not of the contents or locations of past landfills. The EPA lists 86 contaminated sites (including 25 illegal landfills); 500 quarries and 100 mines (both active and non-active) have been identified, most of them very small and unlikely to present a serious risk. In the Western River Basin, 6 contaminated sites, 58 quarries and 30 mines have been identified.

An EPA report in 2005 provided the first comprehensive overview of the scale of unauthorised waste activity in Ireland. It concluded that large-scale illegal dumping (as in County Wicklow during 1997–2002) had ceased and that illegal cross-border movement of waste had reduced significantly as a result of increased vigilance and cross-border cooperation.

Groundwater. Image courtesy of O'Neill Groundwater Engineering

How can these sites cause water problems?

The key threat to waters from these sites is potential contamination from pollutants (mainly dangerous substances, for example metals and fuel). These contaminants may travel through groundwaters and enter surface waters, affecting the quality of both, damaging aquatic plants and animals and impairing water uses.

There is a second possible threat. At some quarry sites, the water table is lowered to allow quarrying. This can affect nearby wet areas, and the transfer of groundwater to surface waters can change water chemistry.

There is concern about such sites in the Western River Basin District. An assessment as to the risk posed by old landfill sites will be carried out by the local authorities and remedial actions put in place where necessary. These potential impacts were voiced by the Advisory Council and the Management Group as water problems in the district.

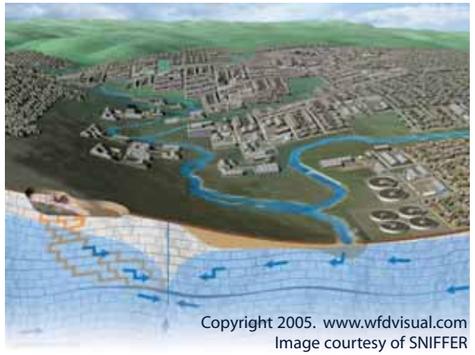
What existing controls are in place?

There is a range of legislation dealing with the establishment and operation of waste management, quarry and mine sites and contaminated lands; the legislation is supported by policies and guidance on best practice for addressing water pollution problems.

The Waste Management Act is the primary control for regulated **waste management.** Licensing of waste facilities is administered by the EPA. Facility monitoring programmes are also specified in the license conditions.

Quarries four years or older must register with local authorities under the Planning and Development Act. The DEHLG has prepared guidelines for local authorities on the registration requirements and process. Planning applications for new facilities of more than five hectares generally require an Environmental Impact Assessment.

Proposed new **mines** require three principal kinds of permits: a mining lease or licence from the Minister for Communications, Marine and Natural Resources, planning permission under the Planning and Development Act and an integrated pollution prevention and control licence from the EPA. The recent Energy Act allows for preparation and implementation of mine rehabilitation plans for the protection of the environment, and grants rights of access if necessary to do this. Applications for all new mines generally require an Environmental Impact Assessment.



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The Environmental Protection Agency Act and the Water Pollution Acts identify responsibilities for addressing water pollution incidents and the requirement to license discharges to waters. The EPA and local authorities apply the principles of integrated pollution prevention; the polluter pays principle and the precautionary approach when dealing with historic, unregulated sites such as **contaminated lands**.

Are these controls adequate to meet the new targets?

The current regulatory controls assign the responsibilities for managing these sites. The challenge is to enforce these controls, particularly to deal with historic, unregulated sites.

What additional actions are proposed?

Using a Code of Practice developed by the EPA in 2006, local authorities are identifying relevant historic **waste disposal** sites, assessing the threat to waters and, where necessary, developing plans to address problem sites.

By the end of 2007, the EPA, Department of Communications, Marine and Natural Resources (DCMNR) and Geological Survey of Ireland (GSI) will have completed characterising **historic mine sites** in Ireland, gaining better information about the sites and their environmental impact. There are new powers to rehabilitate mines and manage waste from extractive industries.

The EPA has indicated that local authorities could apply its best practice guidance to identify and assess potentially **contaminated lands.**

These activities will confirm the locations and threats that these sites pose and support the control of discharges. Monitoring, extended where appropriate, will confirm the extent of the problem. In considering potential restoration measures, social and cost factors, as well as technical feasibility, will have to be evaluated. Education and awareness-raising programmes will also be provided.

These proposed actions will result in stricter controls on activities with the potential to discharge to waters. Stakeholders directly affected by these proposed measures include local authorities and industries, commercial enterprises and owners of land on which such activities have taken place.

Water filled quarry.
Image courtesy of O'Neill Groundwater Engineering

Question 4

What is your view about the suggested actions to control problems related to landfills, quarries, mines and contaminated lands within the Western River Basin District?

Are these actions appropriate?

Have we missed something important?

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Agriculture

Agriculture and the agri-food sector together account for about 8% of total added value in the Irish economy and, in 2005, employed around 150,000 people, around 8% of the workforce. Farms cover about two thirds of the island's total land area, 90% as grassland and 10% for tillage (mostly in the south and east). Beef, milk and sheep account for over half of the value of agricultural produce; meat and milk products are major exports. Average stocking levels on farms are 1.3 animals per hectare.

Former European aid schemes, production demands and economic influences encouraged intensification: fewer farms, lower employment, larger herds and farms becoming more grass-based. Intensive piggery, poultry and mushroom enterprises are concentrated in Ulster: Counties Cavan and Monaghan have the highest numbers of pigs and poultry respectively.

The EPA's most recent National Water Quality report identified agricultural activities as the main problem in one third of Ireland's moderately polluted river channels.

Reform of the EU Common Agricultural Policy, and new opportunities (for example the increase in bio-fuel crops), mean that the agricultural sector will continue to change and farmers will have an important role in our action plans.

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Image courtesy of SNIFFER

How can agriculture cause water problems?

The EPA has identified two main water quality problems relating to agriculture. A third issue, which is pesticides, is covered under **Dangerous substances.** The two main problems are

- Enrichment of water by nutrients (phosphorus and nitrogen). Nutrients can be carried into waters from a range of activities on farms including contaminated water running from farmyards, or washed from fields that have been treated with nutrient-rich organic and chemical fertilisers or leaks from manure stores. The nutrients accelerate plant growth, which disturbs the balance of aquatic plants and animals and affects water quality This eutrophication, as it is called, is the most widespread threat to our water quality

- Organic pollution from animal slurry/manure and silage effluent. The breakdown of this organic material uses up oxygen that aquatic plants and animals need to survive, and suspended solids and ammonia can cause fish kills (although such kills have reduced in number). Slurry can also contaminate drinking water with bacteria, parasites and viruses. Ireland's latest drinking water report shows widespread contamination of smaller rural water supplies from agricultural sources.

Agriculture is the principal land use activity in the eastern part of the Western River Basin District. 67% of land is used for agriculture. Agriculture currently accounts for between 8 to 15 % of employment in the region though this is likely to decline with growing reliance on industrial and service sectors. Estimates of nutrient input into waters in the Western River basin indicate that agriculture produces over 45% of the yearly phosphorus load and 80% of the nitrogen load but this is spread in a diffuse manner over the entire basin. The potential water problems linked with agriculture practices were voiced by the Advisory Council and Management Group as water problems in the basin. Overgrazing by sheep caused significant damage in the western peat land areas in the past and may no longer be seen as a major threat due to the decline in sheep numbers. However, the Advisory Council indicated that overgrazing in isolated pockets was still an issue for concern in the basin.

What existing controls are in place?

Ireland's Department of Agriculture and Food operates within Europe's Common Agricultural Policy and environmental controls. In 2005, the department opted for full decoupling of agricultural support from production under Europe's Single Farm Payment scheme.

Under **cross-compliance**, all farmers are required to respect the various Statutory Management Requirements set down in European legislation on the environment and on public, animal and plant health and animal welfare; they are also required to maintain land in Good Agricultural and Environmental Condition. In 2006 the **Nitrates Action Programme** was introduced to provide statutory support for good agricultural practice in protecting waters from nutrient inputs; implementation will be monitored under cross-compliance. These regulations include controls on minimum storage requirements for livestock manure, nutrient management and land management actions that prevent or reduce water pollution; they also provide for monitoring and mini-catchment programmes to monitor the effectiveness of the national nitrates action programme.

Participation in **agri-environmental schemes**, such as the Rural Environment Protection Scheme (REPS), continues to increase. This scheme rewards farmers for carrying out their activities in an environmentally friendly manner to bring about environmental improvement on farms; **organic farming** is also supported. At the end of 2006 almost 60,000 Irish farmers (around 50% of farmland) were participating in REPS.

The Department of Agriculture and Food provides investment aid for improved storage for **farm manure** and funds equipment for application to land. The 2006 scheme (with grant rates of 60% to 75%), helping farmers to comply with the requirements of the nitrates action programmes, had 48,600 applicants in Ireland.

The DEHLG, the EPA, local authorities and fishery boards have powers of inspection and enforcement under **water pollution laws**, including the nitrates regulations. These bodies undertake routine inspections and enforcement actions in response to water quality incidents related to agriculture. The EPA licenses intensive agricultural enterprises under the **Integrated Pollution and Prevention Control (IPPC)** system and applies IPPC Directive thresholds.

Under the **phosphorus regulations**, local authorities must identify, address, monitor and report on activities (including agriculture) associated with phosphorus pollution. Some local authorities have made **bye-laws** to control agricultural activities in some priority areas. Major farm surveys have been carried out by Galway County Council and further surveys are planned by local authorities in the basin. Local authorities also have responsibility for requiring agricultural **sludge** to be used in accordance with a Nutrient Management Plan to avoid contamination of soil and pollution of water.

In addition local authorities in conjunction with the regional fisheries boards undertook field surveys in river catchments using a rapid assessment technique to help identify water quality problem locations using a method developed under the Western River Basin District Project, the Small Stream Risk Score Method (www.westernrbd.ie)

Are these controls adequate to meet the new targets?

The recent introduction of **good agricultural practice regulations** and **cross-compliance** are evidence of the agricultural sector's role in protecting the majority of waters. However, these measures will be kept under review to ensure that objectives are achieved.

What additional actions are proposed?

The nitrates action programmes will be reviewed in 2009. Strengthened measures may be needed, for example in sensitive areas, if the action programme has not shown adequate water quality improvements.

Detailed studies will assess the effectiveness of the nitrates action programmes. Ongoing surveys and mini-catchment studies will produce information to monitor trends in key agricultural and water quality indicators. One measure of effectiveness for agricultural practices is reduction in farm nutrient surplus which takes account of animal numbers, fertiliser sales and animal feeds; there has been a marked decline in fertiliser sales and animal numbers in recent years. Agricultural survey findings and indicators will be tracked and reported in the district's action plans.

Specific agri-environmental technological solutions may be implemented in appropriate areas: for example, grant aid is available for digester schemes that treat excess manure from intensive enterprises. Voluntary agri-environmental schemes such as riparian zone restoration in sensitive areas are being encouraged. Education and awareness-raising programmes will also highlight these issues.

This series of recently reinforced actions will result in higher performance standards for agricultural activities. Stakeholders directly affected by these proposed measures include the agri-food sector: farmers and dependent industries.

Question 5

What is your view about the suggested actions to control problems related to agriculture within the Western River Basin District?

Are these actions appropriate?

Have we missed something important?

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Wastewater from Unsewered Properties

In rural areas many houses and businesses are not connected to public systems that collect, treat and dispose of wastewater: they rely mainly on on-site systems (conventional septic tanks or proprietary systems), via soil percolation areas. More than 400,000 properties (20–30% of the total) are currently without public sewerage provision: representing over 1.3 million people (30% of the population), generating over 230 million litres of wastewater a day.

There has been a large increase in development in unsewered areas:

- Single dwellings or holiday homes, often in ribbon developments alongside roads leading from towns and villages
- Housing clusters of up to 100 homes served by shared treatment systems
- Commercial premises such as hotels and guesthouses
- Light industrial facilities.

The vast majority of on-site treatment facilities are septic tanks and single-house proprietary treatment systems. One in five of the 500,000 housing units built since 1991 were detached houses in rural areas with individual septic tanks. The counties with the highest percentage of one-off housing units built since 1991 were County Galway (52%), Roscommon (43%), Donegal (41%) and Monaghan (40%).

Septic Tank
Image courtesy of Robert Meehan

How can unsewered properties cause water problems?

To minimise impacts on water quality, treatment facilities should be located in suitable areas and designed, constructed and maintained to appropriate standards. If these systems are not working properly, nutrients, organic material, chemicals bacteria and parasites may seep from wastewater into groundwater, contaminating nearby drinking water wells or damaging the quality of receiving rivers, lakes or marine waters.

The very limited research to date suggests that many systems are not working properly. Over half County Cavan's population is served by on-site systems. Cavan County Council's 2002 pilot survey found that more than one third of on-site systems were defective. Many tanks were poorly maintained (not desludged) or poorly designed; in extreme cases, wastewater was bypassing percolation systems, entering streams by channels, pipes or across the ground. In the same year septic tanks caused nearly 30% of water quality complaints investigated in the county. Cavan County Council introduced bye laws dealing with this issue.

The problem of septic tanks were raised at every consultation event in the Western district and highlighted by the Advisory Council and management group as posing a potential problem to the waters in the district. The recent Census 2006 Preliminary Report indicates that significant growth in population has occurred in rural areas adjacent to towns. This growth is resulting in individual houses in the countryside and housing clusters in small villages throughout much of the basin. Coastal counties; Galway, Mayo, Sligo and Clare have an ever increasing number of holiday homes. As many rural properties are spread over wide areas, provision of public sewerage systems, especially ahead of new development, is very difficult and often very costly. Effective controls on planning, design, construction and operation of on-site systems are required to avoid water quality problems.

What existing controls are in place?

The planning system is the key control, ensuring the protection of our waters by restricting the location of new developments. Domestic, commercial and industrial developments must obtain planning permission from local authorities or, if appeals arise, from An Bord Pleanála, under the Planning and Development Act.
The DEHLG has issued guidance on best practice to local authorities about development plan policies, development control and enforcement standards and practices. The EPA has published guidance manuals explaining the investigation and design requirements for systems serving individual premises.
Small discharges of domestic sewage (from a typical septic tank serving a single dwelling) via a percolation area are exempted from Water Pollution Acts licensing. However, licences are required for larger discharges from septic tanks and other treatment facilities. Some local authorities have passed specific bye-laws covering priority areas where on-site system discharges have caused water quality problems.

Are these controls adequate to meet the new targets?

These controls and guidance play a major role in protecting water quality in unsewered areas, but problems arise where tanks or systems are not properly planned, designed, managed and operated.
The EPA guidance manuals cover single houses and small commercial developments; new guidance is needed to cover clusters of houses or commercial developments discharging at a single location.

What additional actions are proposed?

Legislation is being amended to clarify and elaborate the statutory basis for the licensing of discharges to soil. The current guidance manuals will be changed to improve existing controls.

Detailed studies are progressing to support the guidance. The aim is to ensure that new unsewered development is located in areas where adequate on-site wastewater treatment and soil percolation can be achieved, rather than in areas where groundwater or surface water is vulnerable to pollution or where the risk of flooding is significant. Sensitive areas — used for shellfish growing or to supply drinking water — will receive particular attention. Local development plans and development control and enforcement practices will have to be modified to reflect these restrictions. The design of new facilities will have to consider soil, geology, surface water and groundwater, both at the site and around it. The guidance will also incorporate improved procedures for soil and hydrology investigation and rigorous controls for installation and construction supervision.

For existing systems, large unsewered populations are being mapped and methods are being developed to calculate the vulnerability of receiving waters to loading from on-site systems. In priority areas, where water quality is threatened, options such as providing main sewers or tank maintenance programmes will be investigated.
A monitoring system that can pinpoint sub-standard installation or performance is being developed. Study of Cavan County Council's bye-laws implementation and effectiveness will inform any future regulatory or enforcement changes. Education and awareness-raising programmes will highlight the issues.

These controls, combined with new water quality standards, will cover problems due to discharges from unsewered properties. These actions will result in the production of new guidance and stricter controls in unsewered areas; they will therefore affect developers in unsewered areas, owners of unsewered property and unsewered industrial and commercial enterprises.What additional actions are proposed?
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Question 6

What is your view about the suggested actions to control problems related to unsewered properties within the Western River Basin District?

Are these actions appropriate?

Have we missed something important?

Forestry

Forest cover now accounts for just over 10% of Ireland's land area, up from about 1% in 1920. The objective is to expand cover to 17% in the next 30 years. This expansion may help to offset Ireland's carbon emissions as trees are net carbon users. Forests can also provide recreational locations and create habitats, enhancing biodiversity when replacing other more intensive land uses.

Over 75% of forest cover on the island is coniferous; the rest is broadleaf, mixed or other wooded land. More recent, private plantations tend to have higher proportions of broadleaved species. About 57% of Ireland's forest cover is State-owned and managed by Coillte. Private forest owners have been planting in significant amounts since the 1980s: over time and as their trees mature they will account for a greater proportion of forest cover and of timber harvesting (which now occurs mainly in state or public forests).

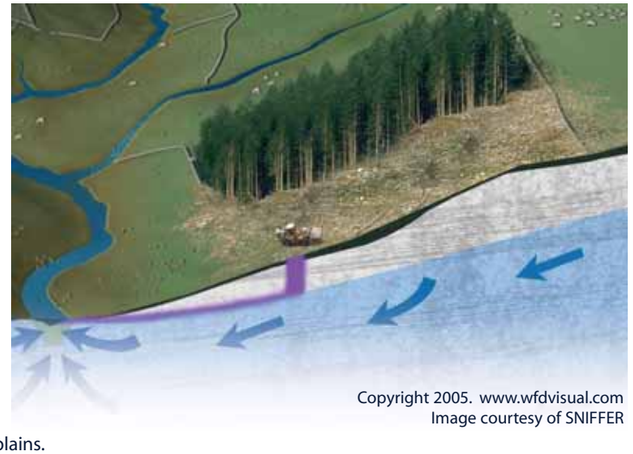
Forestry in Connemara

How can forests and forestry activity cause water problems?

Forests can have both positive and negative impacts on the environment. The negative impacts are largely related to poor management or to planting on unsuitable soils, and many of the current water problems associated with afforestation are a legacy of old practices, which have been subsequently amended.

When a forest is established, site cultivation and drainage may give rise to nutrient or sediment loss. Forest canopies intercept rainfall, some of which is returned to the atmosphere; the remainder is stored or finds its way to soil, underlying rock or surface waters. Changing canopy cover can alter the quantity and quality of water flowing from forested areas. Forest canopies can absorb air pollutants that may affect water quality, depending on the geological setting. Road construction and harvesting may also result in sediment and nutrient loss.

Depending on the subsequent land use, inappropriate deforestation may result in soil erosion, slope instability, nutrient leaching and reduced water-holding capacity in floodplains.



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Bonet River

The main potential water problems that can result are:

- Acidification: forest canopies can capture sulphur and nitrogen compounds from the atmosphere. Rain becomes more acidic as it passes through the canopies to the ground below, and may worsen the chemical balance of receiving waters
- Nutrient enrichment: forestry activities can introduce extra nutrients which, in naturally nutrient-poor areas, can lead to problems such as algal growth
- Sedimentation:road-making and stream-crossing from activities such as planting and harvesting can cause erosion and sedimentation on susceptible soils. Mobile sediments may reduce water quality or damage sensitive areas
- Flow pattern changes: the amount of water reaching the soil surface is reduced by evaporation of water intercepted by the canopy. Clearfelling of forests may lead to a change in flow patterns
- Pesticide contamination: incorrect application of pesticides may result in contamination of waters.

Forestry in the Western River Basin District covers about 10% of the land area. However, as highlighted by the Western River Basin District Advisory Council and Management Group, some forested areas are located in sensitive catchments with habitat protected species such as the freshwater pearl mussel, salmon and trout spawning areas. This is a particular cause for concern and underpins the need for adequate control on forestry operations in sensitive areas.

What existing controls are in place?

To ensure that all timber produced is derived from sustainable managed forests, Ireland's Forest Service (part of the Department of Agriculture and Food) is implementing **Sustainable Forest Management (SFM)**, with the **Irish National Forest Standard** as a framework for development and evaluation. A Code of **Best Forest Practice** covers all stages from seed selection through to the establishment and maintenance of timber harvesting.

Tree felling is subject to licence under the **Forestry Act**. Landowners are required to give notice of intention to fell trees, following which Prohibition Orders are normally served. These remain in force pending the issuing of a Limited Felling Licence, which can include environmental and replanting conditions. General Felling Licences are normally granted to large estates with management programmes, or for lands where scattered trees must be cleared in order to enable new planting.

The Minister for Agriculture and Food introduced licensing regulations in 2006 to control **aerial fertilisation**.

Are these controls adequate to meet the new targets?

The existing legislation, binding environmental codes of practice and guidelines play a major role in protecting water quality in forested areas. However, as research increases knowledge of the interaction between forest and water, legislation and guidelines may have to be strengthened. For example, additional guidelines may be required on protection of highly sensitive catchments with species such as the freshwater pearl mussel, trout and salmon.

The Forestry Act requires replanting of felled areas. It may need to be revised to allow certain previously-forested areas, particularly the more sensitive peatland sites, to be managed differently after clearfelling including the non-planting of these areas in the future.

What additional actions are proposed?

For existing forests and associated activities, the key actions are:

- To ensure implementation of current statutory regulations, guidelines and codes of practice. Environmental protective measures for forestry in sensitive areas can include establishing riparian buffer zones in advance of harvesting, managing the size of coup (crop) area to be felled to limit nutrient input, managing drainage systems and establishing sediment control systems such as ponds or diffuse overland flow

- To introduce more stringent actions for the most sensitive areas, when scientific evaluation establishes a need. For example, nutrient loading could be reduced in sensitive areas by the phased felling of smaller harvesting coup rather than felling a large forest block all at once

- To ensure that future development is undertaken strictly within statutory regulations, water protection guidelines and codes of practice so that forests will have little or no impact on water quality. That applies especially in environmentally sensitive areas, with a need to limit nutrient and sediment losses and acidification.

Detailed studies are currently under way to provide a better understanding of forests, forestry operations and water. Maps of areas sensitive to acidification, nutrient enrichment, sedimentation and flow change are being developed to improve the assessment of sites suitability for

Tree Felling

planting. The increased scientific knowledge will feed into any amendments to existing guidance and may result in revised guidance, if appropriate, to ensure proper assessment of sites for forestry.

Recommendations for the monitoring and assessment of forest activity will also be included in any updated guidance. A register of chemical use will be established detailing the specific material used, the quantity used, the date of application and the location of application. Education and awareness-raising programmes will also be used to highlight these issues.

Codes of practice and guidelines must be applied rigorously to ensure compliance with water quality standards; modified or additional codes may be required, as well as some changes in the legislative framework governing forestry. These actions will therefore affect the forestry sector: both publicly and privately owned plantations as well as the associated saw-milling and processing industries.

Question 7

What is your view about the suggested actions to control problems related to forestry within the Western River Basin District?

Are these actions appropriate?

Have we missed something important?

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Usage and discharge of dangerous substances

The term **dangerous substances** describes a wide range of chemicals that may be toxic to people, plants and animals and are harmful to our water environment. They are contained in many everyday products used increasingly often in households (for example medicines and cleaning products), industry, forestry, agriculture, small businesses, mines, construction sites and water treatment works. Surface run-off from roads and urban areas can also contain dangerous substances from motor vehicle emissions.

How can dangerous substances cause water problems?

Some dangerous substances can be toxic to aquatic plants and animals at levels equivalent to a teaspoonful dissolved in an average swimming pool. They can persist in our waters and their sediments and slowly build up in the bodies of aquatic organisms, poisoning them and causing problems higher up the food chain or interfering with their natural breeding processes. Quality standards for dangerous substances are being determined by Europe-wide methods to protect the most sensitive of our species.

As there are many potential sources of dangerous substances, there are numerous ways that substances can enter our waters. These include regulated, unregulated or accidental releases such as:

- Licensed industrial and municipal effluents
- Authorised discharge from on-site wastewater systems
- Contamination from applying pesticides to agricultural land, forestry, livestock, recreational areas, roads, paths, railways or gardens
- Use of chemicals in aquaculture to control disease
- Seepage from un-lined waste disposal sites or contaminated sites
- Intermittent combined sewer overflow spills from urban systems
- Accidental misuse or inappropriate disposal of products.

Contamination from dangerous substances can persist for long periods in our environment requiring costly clean-up operations. For example a task force, overseen by the EPA, had to put right an accidental spillage from waste material being transported near Lough Corrib which involved removal of contaminated soil from the spill site. The threat from household usage and release of dangerous substances was voiced by the Western River Basin district Advisory Council and management group as a potential water problem with particular concern for protection of our drinking water sources.

What existing controls are in place?

Ireland has **drinking water standards, water quality standards** and **emission control standards** for a range of dangerous substances (including chemicals prioritised across the European Union and further substances of relevance to Ireland). Monitoring is undertaken by local authorities, the EPA and the Marine Institute.

Several agencies are responsible for enforcing various regulations aimed at controlling dangerous substances:

- Major industrial activities are regulated by the EPA under the **Integrated Pollution Prevention and Control** (IPPC) Regulations. Permits restrict the discharge of certain dangerous substances to waters
- The EPA reports the total discharges to water of key pollutants to the European Commission every three years under the **European Pollutant Emission Register** (EPER) initiative. Registers are important to verify that controls intended to reduce or phase out these discharges are working
- Under regulations for the **Major Accidents** (Seveso II) Directive, industries that use dangerous substances above a threshold level must have procedures to prevent and control accidents
- Under the **Water Pollution Acts**, local authorities license industrial and commercial premises that discharge to waters and have specific responsibilities under the **Dangerous Substances Regulations**. The EPA administer these controls. In 2006 the EPA reported on compliance: most of the exceedances were of heavy metals (zinc, copper, chromium and lead), caused either by historical mining activities or by local geology that raise the levels of heavy metals in water naturally. The local authorities have identified sources of pollution and the actions to address problems.
- The EPA and local authorities are involved in controlling discharges of dangerous substances to **groundwater**
- Aquaculture and its associated activities (such as sea-lice treatments) are controlled by the DCMNR, supported by the Marine Institute and local authorities
- The Pesticides Control Service authorises **pesticides** and carries out surveys and on-farm inspections of their use. The Health and Safety Authority and Irish Medicines Board are involved in dangerous substances approval.

Combined Sewer Overflow
Image courtesy of WYG

Are these controls adequate to meet the new targets?

The current controls focus on a limited list of substances, but more substances now need to be controlled. The European Commission has proposed water quality standards for 33 priority substances and 8 other pollutants. Expert groups in Ireland have identified further specific pollutants that threaten local waters.

What additional actions are proposed?

By 2008, new water quality standards will be set following consultation. This process will have to be repeated periodically as new concerns emerge about substances.
Dangerous substances at groundwater, river, lake and marine sites will be surveyed by the EPA and the Marine Institute. Their status will be classified, monitored and reported upon.
The systems of licensing and authorisation also need to be updated and extended to cover the new range of substances and the activities discharging these substances. Under new regulations being made by the DEHLG, licences for wastewater treatment plant discharges and storm overflows will set mandatory emission limits and specify monitoring requirements to achieve new quality standards in receiving waters. The system will be administered by the EPA. Other local authority discharges containing dangerous substances, which may require licensing, are being studied.

Industrial licence conditions will be revised to set controls and emission limits adequate to achieve the new quality standards in receiving waters. This will require minor changes to existing EPA, local authority and Marine Institute licensing systems.
In June 2007 a new European regulatory framework for the Registration, Evaluation and Authorisation of Chemicals (REACH) set up a registration system for chemical usage. Chemicals identified under REACH will be assessed for the risks they pose to human health and the environment. It will be administered by the Health and Safety Authority, supported by the EPA.
The current EPER scheme will be replaced by the European Pollutant Release and Transfer Register (PRTR) from 2007 onwards. PRTR will include more substances (91 rather than 50) and industry sectors than EPER. The first PRTR data will be published in 2009.

The Pesticides Control Service will continue to review pesticide authorisation based on the current scientific advice. The cycle of pesticide surveys has been harmonised with Northern Ireland so that the same crops are surveyed in the same year throughout the island.
Inventories of emission, discharges and losses of substances (whether prioritised by the EU or nationally) will be established so that the working of controls can be checked. These activities will all help to identify substances needing control through licensing, authorisation, water quality standards and monitoring. Education and awareness-raising programmes, and voluntary initiatives like the phosphorus-free detergents agreement, will also highlight these issues.

The new water quality standards and the extended monitoring, licensing and authorisation actions will address the major sources of dangerous substance discharges. Stakeholders directly affected by these proposed measures include the public, local authorities and industrial and commercial activities involved in the production, use, handling, storage or discharge of dangerous substances.

Question 8

What is your view about the suggested actions to control problems related to dangerous substances within the Western River Basin District?

Are these actions appropriate?

Have we missed something important?

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Harbour and Coastal Defence in Sligo
Image courtesy of Sligo County Council

Physical modifications

We have physically modified many of our waters for water supply, recreation, transport, flood protection, hydropower, aquaculture and land drainage. The extent of modification is being systematically assessed for the first time: there are around 95,000 culverts and bridges on our rivers, almost 900 kilometres of river embankments, 19 large water reservoir or hydropower dams, 10 large ports and over 200 kilometres of coastal defences.

How can physical modifications cause water problems?

Physical modifications can directly affect habitats or indirectly change natural processes (for example flow or silt movement), altering plant and animal communities by reducing their variety or numbers. For example:

- Rivers have a natural mix of pools and shallow riffles and variation of flow patterns, providing habitats for fish. Draining or maintaining rivers without recreating this natural mix can deprive trout and salmon of spawning habitats and thus reduce their numbers; protected areas fringing the waters can be damaged by reduced water levels or by flooding
- Migratory fish need to reach upstream spawning areas; bridges or weirs can restrict access and reduce spawning success and thus population numbers
- Hard structures like ports and harbours can replace or reduce natural habitat
- Land drainage, overgrazing, de-forestation, road construction and cattle access can have an indirect effect on both surface and groundwaters, changing how much and how fast water drains off the land. The effect on one receiving stream may be small, but the combined effect of many changes can alter water quality and flooding behaviour in a district, resulting in increased risk of property flooding.

There have been a number of large scale schemes in the Western River Basin District involving physical modifications. For example, the Corrib weir and main channel, Cong Canal, the Moy, Robe, Clare and Dunkellin river drainage schemes, Galway and Sligo ports and more localised engineering works such as flood protection schemes. New developments are also proposed such as the new Corrib Bridge at Galway. Stretches of the drained river systems need to be dredged from time to time removing silt build-up to reduce flooding risk and ensure that the system

is navigable. The Western River Basin District Advisory Council and Management Group have also expressed concern about the widespread development that has happened on the floodplains in the basin. They were particularly concerned about the potential effects on water quality and flooding behaviour as a result of the physical modifications to flood plains. Concern was also expressed at localised drainage by landowners leading to local flood problems.

What existing controls are in place?

Planning and development processes and marine licensing systems provide a general level of control over physical modifications at the approval stage. But the existing controls are limited in scope and vary depending on the type of physical modification and its proposed location:

- The Office of Public Works and the Department of Communications, Marine and Natural Resources (CMNR) are the lead authorities for **river and coastal flood and erosion management**
- **Private developments** must obtain planning permission via local authorities
- **Fishing and aquaculture** activities are licensed by local authorities, regional fisheries boards and the DCMNR, the Loughs Agency or local authorities
- Works on the **foreshore** are authorised or licensed by the DCMNR
- For the disposal of **dredged material** at sea, permits are required from the Minister for Communications, Marine and Natural Resources
- **Environmental Impact Assessments** are required in support of planning applications and foreshore licence applications for certain large developments.

Are these controls adequate to meet the new targets?

There is no comprehensive system to control physical modifications and monitor and protect the physical conditions of surface waters. A comprehensive registration and authorisation system may be needed to control the impact of physical modifications.
The impact on Irish waters of physical change is not routinely recorded and so it is difficult to estimate the extent of impact. However, new monitoring programmes will, in time, establish the overall physical health of our waters. The limited evidence collected to date indicates that more than one third of physically modified water bodies show ecological impact. In such circumstances these rivers may have to be rehabilitated.

What additional actions are proposed?

The European Commission is likely to adopt a Floods Directive in 2007. Flood risk assessments and mapping and the preparation of Flood Risk Management Plans will be required. In Ireland, the Office of Public Works will lead the development of plans, which will address climate change effects, incorporating modern approaches of avoiding increased flood risk and non-structural solutions such as flood forecasting systems.
The government is currently considering the introduction of regulations to control physical modifications to surface waters. These controls may involve a licensing regime or registration based on general binding rules. It is likely that new regulations will be made to give effect to this new system of control. The system will probably be administered by a single statutory authority.
Detailed studies of physical modifications and their effects are under way, to support the development of controls on physical modifications.

Progress so far indicates that the key sources of problems are:

- in fresh waters, river drainage works and land use changes. Monitoring methods that take account of the natural shape of the river and systematically record landscape changes within the surrounding area are currently being trialled
- in marine waters, coastal structures, land use change, ports and associated dredging. The sensitivities of habitats and of plant and animal communities to physical modifications are being explored.

The feasibility of rehabilitating affected waters is being examined against social, technical and cost criteria; for instance rivers with the potential to produce significant salmon and trout populations might be prioritised for remedial programmes. Measures might include channel narrowing, planting to stabilise river banks, introducing stone riffles or fish passes, replacing hard structures with soft elements (for example saltmarsh wetlands or beach nourishment) or compensatory habitat creation.

Flooding on the Clare River
Image courtesy of the Office of Public Works

Guidance on best practice will cover construction techniques and timing of works, floodplain development control, good management and environmental initiatives such as Sustainable Drainage Systems (SuDS); it will ensure that proposed developments are consistent with flood and coastal management plans. A decision-making support tool will help regulators assess applications for new developments and maintenance works; the effects of physical modifications will be monitored. Education and awareness-raising programmes will be provided.
These proposed actions will result in stricter controls on existing and planned physical modifications to surface waters. Stakeholders directly affected by these proposed measures include developers and operators proposing engineered modifications to surface waters.

Question 9

What is your view about the suggested actions to control problems related to physical modifications within the Western River Basin District?

Are these actions appropriate?

Have we missed something important?

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Abstractions

We use large amounts of water each day:

- At home for drinking, cooking, cleaning, bathing and flushing the toilet
- In agriculture for animals to drink and for dairy washing and watering crops
- Recreationally for watering golf courses, sports grounds, etc
- In many different industries as an ingredient or, in the production process, for washing or cooling, or for power generation.

These uses add up to more than 1.7 million cubic metres (m3) of water usage every day and over half a billion cubic metres a year in Ireland. All of that water has to be treated to a high standard to remove impurities and make it fit for consumption.

This water is abstracted either from surface waters or from groundwaters (wells and springs). Local authority water schemes supply 83% of the population; the rest use private schemes (7%) or individual wells (10%). Ireland has around 550 surface water schemes (about 375 being large supplies of over 100 m3 a day), and there are almost 2,000 groundwater wells (over 600 being large supplies).

The vast majority of these abstractions are currently sustainable. However, rising demand (due to population growth) and the impact of climate change may mean that some areas will experience a reduction in the available water resource in the future.

Lough Gill, source of water supply for Sligo/Leitrim.

How can abstractions cause water problems?

If we abstract too much water from our underground and surface water resources, we reduce flow in springs and rivers and lower water levels in lakes, wetlands and wells. This can make water supplies unsustainable and can have a negative impact on aquatic plants and animals and wetland areas. In extreme cases river beds may dry up, lake shores can become exposed and, in coastal areas, salt water may seep into groundwater.

Although water supplies in terms of quantity are not at present seen as a major issue in the Western River Basin District, the Advisory Council and Management Group expressed concern about the development of some regional water supply schemes, which may have a future impact. In addition concern was expressed that the introduction of water charges for the farming sector may also see a return to the use of private wells, which may give rise to localised abstraction issues.

What existing controls are in place?

Local authorities obtain approval to abstract water from surface water sources under the **Water Supplies Act** and must establish and maintain registers of abstractions under the **Water Pollution Act**. Currently, individual water supply schemes operate under historical water rights agreements and new schemes are assessed as part of local planning approval systems.

The quality of drinking water is stipulated in the **drinking waters regulations**. The nitrates and groundwater directives also contain requirements to protect the source of water supplies.

Are these controls adequate to meet new the targets?

Abstraction legislation is dated and needs to be updated and extended to protect waters adequately, with a modernised system of registration and prior authorisation for significant abstractions.

What additional actions are proposed?

The DEHLG will propose new regulations creating a single registration and licensing system for all significant abstractions from groundwater and surface waters. The licence will set abstraction limits to preserve water resources and will also specify compulsory monitoring requirements. These proposed new controls will ensure appropriate supervision of all significant abstractions.

Detailed studies are under way to establish the amount of water abstracted today, with predictions for the year 2015. Methods are being developed to calculate minimum water resource requirements to protect waters. The following requirements are being considered:

- In rivers the flow necessary to protect fish populations, especially during summer's low-flow period, is the key abstraction control
- In lakes the acceptable water level fluctuation is the key abstraction control
- In groundwaters a better understanding of water balance has been developed to protect water resources so that the water table and dependant plants and animals are is not adversely affected.

Unsustainable abstractions are being identified: alternative sources of water may be required, with social factors, costs and technical feasibility to be evaluated. Proposed developments may be restricted if they are not consistent with development plans and supply scheme investment programmes. Leakage detection and reduction programmes will be promoted; guidance dealing with all these issues will be prepared; awareness-raising programmes will highlight these issues to domestic and industrial users.

These proposed actions will result in stricter controls on existing and planned abstractions. Stakeholders directly affected include public authorities using water or proposing abstractions, industrial, commercial and agricultural operations currently using water and developers proposing abstractions.

Question 10

What is your view about the suggested actions to control problems related to abstractions within the Western River Basin District?

Are these actions appropriate?

Have we missed something important?

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Local issues

Eutrophication of estuaries and lakes

Excessive nutrients in our natural waters can lead to the growth of algae and weeds. This enrichment of water is called eutrophication and it is recognised as a major threat to the quality of Irish waters. Algal blooms and weeds can disrupt the normal functioning of an ecosystem, causing a variety of problems. They reduce the value of the affected waters for fishing, swimming, boating and as a habitat for protected species. They can also interfere with the treatment of drinking water. In most cases where there are problems in freshwaters the enrichment is caused by phosphorus inputs whereas both nitrogen and phosphorous cause problems in estuaries. The sources of these nutrients are sewage, agricultural and other land use effluents, fertilisers and industrial wastes. In 1998, the Phosphorous Regulations were introduced to set water quality standards for our rivers and lakes. These standards must be met by the end of 2007.

Increased algal growth has been observed around the shores of Lough Corrib and alga blooms have occurred on Lough Carra, Carrowmore and other western lakes. The introduction of the wastewater treatment facility at Tuam has led to improvement in the water quality in the main water body of lower Lough Corrib and the provision of the Mutton Island treatment plant for Galway city has led to a major improvement in the Corrib estuary. Control of phosphorous inputs to the catchment areas of lakes like the Corrib and Carra systems is essential to maintain and improve their water quality. All of the major lakes affected by pollution have been included in the National Water Framework Directive Monitoring Programme.

Elsewhere in this report there are measures identified to deal with human sewage, farm effluents, forestry and discharge from industry. One of the aims of these measures is to reduce the amount of phosphorous and nitrate entering our waters and therefore, to reduce the incidence of eutrophication in our lakes and estuaries.

Question 11

What is your view about the suggested actions to tackle eutrophication within the waters of the Western River Basin District?

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Invasive alien species

Invasive alien species are non-native plants or animals that successfully establish themselves in our aquatic and fringing habitats and damage our natural flora and fauna. There is growing evidence that they pose a major threat to our diversity of native plants and animals: for example by preying on them, out-competing for habitat or food, altering habitat or introducing pathogens or parasites.

The Environmental Protection Agency identified the eight species of main concern in Ireland – of these the Zebra mussel and Japanese seaweed have been identified in waters in the Western River Basin District. For instance:

- **Japanese Weed** is in our coastal waters. It out-competes local species, such as seagrasses and kelp, for space and light.

Curly Leaf Pondweed
Courtesy of Joe Caffrey Central Fisheries Board

Lough Corrib Rinaroon Bay before invasion - Image courtesy of Joe Caffrey Central Fisheries Board

Lough Corrib Rinaroon Bay after invasion of Curly Leaf Pondweed - Image courtesy of Joe Caffrey Central Fisheries Board

- **Zebra Mussels** are located in Lough Gill and have been identified at a very early stage in Lough Conn and more recently in Ross Lake, which is linked to the Corrib system through Loch Sheamais Mhic Conraoi and Loch an Orain. They attach to firm surfaces, boat hulls, keep nets and fishing gear, rock, gravel, other mussels and plants and spread easily into other systems.

- **Curly Leaf Pondweed (Lagarosiphon)** has been identified in the upper Lough Corrib basin. Originally from South Africa it has become a serious nuisance, colonising entire bays and building up in dense mats dramatically altering the natural ecology. It is sold in garden centres as an oxygenating plant for garden ponds and if it escapes into the natural ecosystem can spread rapidly by fragmentation and wind dispersal, boat movement and angling equipment.

The National Parks and Wildlife Service is the primary authority for biodiversity protection in Ireland. It is leading studies, through an All Ireland Forum on Invasive Species, of how aquatic alien species spread and how to exclude them, remove them or, where eradication is not feasible, manage them. Risk assessments have been carried out for over 560 potential and established invasive species. Management plans will be prepared for the 10 highest-risk alien species or groups of species already here, with exclusion strategies or contingency plans prepared for the 10 highest-risk potential invaders. The studies will also review monitoring programmes and raise public awareness of the threats.

Zebra Mussels on Boat hull
Image courtesy of Dan Minchin

Other scientific groups and fishery organisations are undertaking supporting studies and will recommend monitoring and control measures. Awareness-raising campaigns will also play an important part in our action plans. In 2007 the Central Fisheries Board produced a "Stop the spread of alien species calendar" to draw this problem to the public's attention, while in the Western River Basin District a "Western Region Zebra Mussel Control Initiative Group" has been formed as an action in 2004 under the Galway County Heritage Plan 2004-2008 and has been to the forefront in efforts to prevent the further spread of the zebra mussel. In addition the Central Fisheries Board and Western Regional Fisheries Board as part of a new Aquatic Invasive Species Taskforce are trialling the removal of the curly leaf pondweed, which has colonised some bays in Lough Corrib.

Question 12

What is your view about the suggested actions to address alien species problems within the Western River Basin District?

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Protecting High Quality Areas

High Quality Areas include surface waters (rivers, lakes, estuarine and coastal areas), which have suffered only minor impact from human activity and as a result are still near natural or pristine conditions. They support a naturally diverse mix of aquatic wildlife. Such areas have gradually declined since the 1970's when water quality monitoring began. Our objective now is to prevent any further deterioration.

In addition there are other designated special wetland areas, which are specifically protected under a range of legislative instruments. These areas are of particular importance because of their value as drinking waters, bathing waters, shellfish waters or habitats. In the latter case these areas may be protected because they contain unique and sensitive wildlife (e.g. salmon and freshwater

Doolough, Mayo.
Courtesy of Dr. Ruth Little, EPA.

pearl mussel) and/or habitats (e.g. raised bogs and coastal lagoons). Some areas are extremely sensitive, tolerating only minimal human impacts, and in some cases may require more stringent measures to protect them: for example freshwater pearl mussels and naturally nutrient-poor lakes.

The damage or loss of the above mentioned high quality and protected wetland areas is often due to their greater sensitivity to land use changes in surrounding catchments such as agriculture, forestry, peat harvesting and rural development activities. Our river basin management plans may include more stringent measures on activities in these sensitive catchments to protect the most sensitive user. The user might be the consumer of drinking water, bathers in designated bathing waters or the species in the protected habitats and wildlife.

In relation to protected habitats and wildlife Natural Heritage in Northern Ireland and the National Parks and Wildlife Service in Ireland are the lead conservation authorities coordinating specific actions to protect these areas. They are leading studies to harmonise conservation action throughout the island, creating joint inventories of areas protected under separate but complementary habitats and birds directives. A detailed study on the water quality and quantity requirements of priority habitats and species has identified field survey and monitoring needs. The agencies are jointly considering dovetailed conservation monitoring programmes. These actions will be progressed by the agencies working together in relation to our shared waters.

Other organisations will have a role in these nature conservation actions. This includes all government organisations as signatories of biodiversity and sustainability policies in Northern Ireland and Ireland.

Lough Corrib
Courtesy of Galway County Council.

Question 13

What is your view about the suggested actions to address problems in high quality areas within the Western River Basin District?

Public Participation

The objectives of public participation in management of the river basin districts are to:
address sensitive area problems within the Western River Basin district?

- Provide information to members of the public
- Improve decision-making by gaining the benefit of the knowledge, experience and initiatives of stakeholders
- Promote constructive dialogue between interested parties and bring greater transparency, openness and creativity to decision-making
- Assist interested parties to influence decisions
- Increase public awareness of water management issues
- Increase public involvement and understanding of, and support for, decision-making processes and thereby improve effective implementation.

The actions undertaken in the Western River Basin District to promote public participation have included a very broad range of measures:

- The River Basin District Advisory Council has been established and has made significant contributions to this booklet.
- A series of public meetings were held throughout the district. Members of the public expressed a wide range of views on water matters.

River Moy.
Courtesy of NWRFB.

- The project team has made presentations to the elected members and the Strategic Policy Committees of the local authorities.
- The project web site has been set up and is being up-dated regularly. It provides a good resource for those interested in water issues in the Western River Basin District.
- Interviews and media coverage with local radio stations and newspapers have been undertaken.

The project team will seek to improve public participation in the implementation of the Water Framework Directive.

Question 14

What is your view about the suggested actions on public participation within the Western River Basin District?

What happens next?

Actions are our response to existing water problems and to growing threats. **Management plans** are to be prepared to respond to all the identified issues. Work on the preparation of plans for the Western River Basin District, like other districts, is currently under way by the relevant authorities, assisted by consultants:

- The **draft management plans** will be published in 2008, and you will have an opportunity to comment on them
- After further consultation, the **final management plans** will be adopted and published in 2009
- Those plans will run to 2015.

The plans will set out environmental objectives together with actions (known as a programme of measures) that will aim to ensure these objectives are achieved in practice. The programme will include both basic and supplementary measures.

Basic measures

The first (and minimum) element of the programme will be the **basic measures** to implement existing water protection directives in full, for example the Urban Wastewater Treatment, Nitrates, Bathing Waters, Shellfish, Birds, Habitats and Dangerous Substances Directives.
But our existing regulatory controls may not be sufficient to deliver improved comprehensive protection for all waters, as envisaged by the Water Framework Directive. Consequently, the basic measures may also include additional controls introduced for specified activities. Such actions include updated pollution controls (such as Codes of Good Agricultural Practice), new systems of authorisation (for abstractions, physical modifications or dangerous substances) plus general binding rules related to on-site systems and forestry.

Supplementary measures

The programme of measures can also include **supplementary measures** that augment basic actions to achieve water objectives. These include codes of practice, voluntary agreements, demand reduction, education, rehabilitation or research programmes and legal, administrative and economic instruments. These actions will be considered (either nationally or locally) on the basis of current monitoring and detailed studies that will give a firm idea of the scale and nature of water problems.

Garavogue River, Sligo.
Courtesy of Sligo County Council.

Affecting people

The first action plans will be adopted and come into effect in 2009; a draft will be published in 2008 for comment. These plans will have an effect on every individual in the Western River Basin District. The change that just one person can make will help to improve our waters. It is really important that you consider the issues raised in this booklet and how they will affect you. This booklet is intended to give you and all interested parties an overview of the main issues that have been identified, as well as possible actions to address them that might be included

Achill Beach.
Courtesy of Mayo County Council.

in a draft management plan. You may think that the actions are not practical, too strict or too lenient — or perhaps we have missed something that would be helpful. If so, this is your chance to tell us!

Before the draft plan is published

There is still important work to complete before the plans can be drafted.

Setting the environmental objectives for our waters

The authorities are developing guidelines to promote the coordinated implementation of river basin management plans across river basin districts. They will set out in practical terms the legal obligations for establishing environmental objectives for water. Under certain restricted circumstances there may be exemptions; direction will be provided on their application. The guidelines will address such questions as:

- What are the default objectives for groundwater and surface waters?
- What objectives apply to Protected Areas (bathing waters, shellfish waters, nutrient sensitive areas, protected habitats and species)?
- What objectives apply to Heavily Modified Waters (e.g. ports) and Artificial Waters (e.g. canals)?
- What if objectives cannot be met by 2015 in some cases?
- What if there is a temporary deterioration in the status of a water body?
- What if objectives cannot be met because of new physical modifications or sustainable developments?
- What if the cost of achieving the objectives by 2015 is disproportionately expensive?

Integrating plans and programmes

The water objectives can only be achieved if plans and programmes in other relevant policy areas are coordinated and integrated. The guidelines will set out how this can be done. These plans and programmes include:

- Habitat and Species Protection Plans under the Habitats Directive
- WATER SERVICES INVESTMENT PROGRAMMES

- The Nitrates Action Programme
- Strategic national development plans and related local plans
- Flood Management Plans.

For example, this coordinated approach could mean prioritising investment (under Water Services Investment Programme) to eliminate known impacts on protected habitats (for example a Special Area of Conservation) where wastewater discharges are inadequately treated.

Assessing environmental impacts

While River Basin Management Plans will have a positive effect on the water environment, their impact on other aspects of the environment, for example air quality or climate change needs to be assessed. Therefore, they must be subject to Strategic Environmental Assessment (SEA). SEA is a system of integrating wider environmental considerations into plans and programmes. Its purpose is to provide a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of specified plans and programmes with a view to promoting sustainable development. SEA must be applied to plans and programmes, which set the framework for future development consent for projects. This booklet is the starting point for the SEA of the River Basin Management Plan. The problems and suggested actions in this booklet will assist the scoping of and consultation about the plan's wider environmental impacts.

Mayo Coastline.
Courtesy of Mayo County Council.

Assessing regulatory impacts

Achieving these new objectives may require the introduction of a range of new regulatory controls (for example licensing and registration of wastewater discharges, abstractions and physical modifications) to give legal effect to the actions. Regulatory Impact Assessments (RIAs) will be applied to regulatory proposals in both jurisdictions on the island of Ireland. The role of RIA is to evaluate the potential impacts of any new regulation and establish whether it would have the desired impact. For example, it is useful to identify potential side-affects or unforeseen extra costs associated with a new regulation. It also helps to clarify the cost of enforcement of the regulation. Future regulations for the implementation of the Water Framework Directive will generally be subject to RIA.

Implementing the management plans

The task of implementing the action plans will fall, mainly, to the statutory authorities. Local authorities are being supported in preparing draft action plans by National Development Plan-funded projects. The draft action plans will be published in 2008. After further consultation, the final action plans will be adopted and published in 2009. In the case of the Western River Basin District, it is envisaged that a small unit will be set up in Galway County Council to coordinate the implementation of the action plans on behalf of the seven participating local authorities. The resources to implement the action plans will come from national and local sources and from both private and public sectors.

Getting involved

Thank you for reading this booklet. Please send your comments and views to

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Public participation

As well as giving your views on the proposals in this document, you might like to participate in other aspects of the implementation of the Water Framework Directive. Public participation is one of the Directive's requirements but, even if it wasn't, it would be sensible: local stakeholders often know local problems best and can suggest practical solutions. The management plan needs local support.

- The interest is there
- Engagement is vital but has often proved difficult in the past
- Local action is better than national campaigns
- Creative approaches are needed
- Conviviality works.

To encourage the public to participate in making and implementing action plans, stakeholder groups have been established. An Advisory Council for each river basin district has been established whose members include Councillors, community representatives, scientists and stakeholders. This participation group has contributed knowledge, expertise and advice in preparing this booklet. A full list of participants is available on www.westernrbd.ie and in Appendix 1 to this document.
However, there are other ways of participating: by making individual comments on the proposals, by contacting the Advisory Council member that represents your sector or your local area, by attending public meetings or by participating in local voluntary groups. Log on to www.westernrbd.ie to send your comments and ideas to the Western River Basin District project office.

Appendix 1
Western River Basin District Advisory Council Members

Academic
Prof Michael J Hynes, Dept of Chemistry, NUIG

Dr Frances Lucey, School of Science, Institute of Technology, Ballinode, Sligo.

Agriculture
Brendan O'Mahony, Connacht Vice Chairman, IFA, Cross, Co. Mayo

Michael Biggins, Chairman, Mayo IFA Co Executive, Ballynalty, Ower, Co Mayo.

Angling
Ricky Fabozzi, NARA, Breeogue, Knocknahur, Co. Sligo

Edmund O'Connell, Western Fisheries, Cloonacauneen, Claregalway, Co. Galway

Association of Municipal Authorities
Cllr Willie Nolan, Creggs Road, Ballina, Co. Mayo

Cllr Jude Devine, 34 Clara Court, Farmhill, Co Sligo

Cllr Tom Reilly, Trinity Court, Tuam, Co Galway

Body for Protection of Water
Martin Brennan, SWAN, Cuppanagh, Clonloo, Co. Sligo

Tom Rogers, SWAN, 39 Millstream, Tuam, Co. Galway

Business/Economic Activities
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Galway County Council
Cllr Sean O'Tuairisg

Mr Con McCole

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Cllr. Tony Ferguson, Edenville, Kinlough, Co. Leitrim

Cllr. John McTernan, St. Judes, Market St., Dromachaire, Co. Leitrim.

Mayo Co. Council:
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Cllr. John O'Malley, Co. Mayo

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