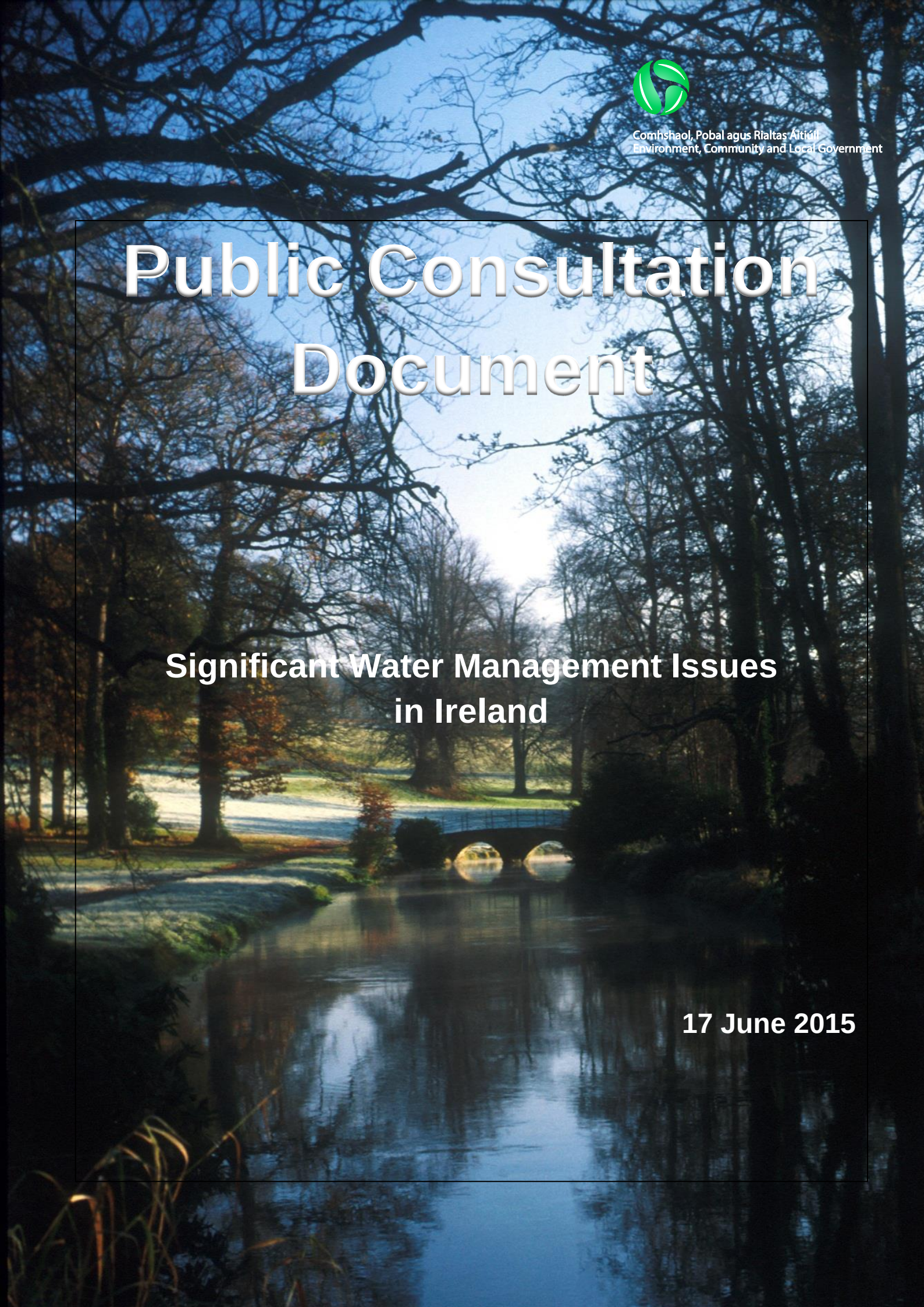

Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

Public Consultation Document

Significant Water Management Issues in Ireland

17 June 2015

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INTRODUCTION

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.

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 water pollution and contaminated drinking waters. The challenge for Ireland is to take action to restore such waters to their natural healthy state.

While the Minister for the Environment, Community and Local Government has a lead role under the EU's Water Framework Directive, addressing these challenges requires collective action.

River Basin Management Plans (RBMPs) are used in all EU Member States to address these challenges in an integrated and holistic manner. The RBMPs look at the pressures on our water resources and set actions to address them. Ireland is now preparing its second round of RBMPs which will be in place in 2017. It is important to know what the critical pressures are for each water sector and what actions can be best delivered to address them in the finalised RBMPs in 2017.

While the making of these RBMPs requires a considerable amount of technical expertise, it also requires the knowledge and perspectives of people who use water in their everyday lives, whether as a source of drinking water for themselves, their livestock or pets, for fishing or swimming or to support manufacturing or power generation or even just for its aesthetic appeal. Water is a fundamental aspect of our lives and RBMPs can assist us in ensuring that we have a healthy water environment for all.

Purpose of this Consultation

In this document, the Minister for the Environment, Community and Local Government (MECLG) is pleased to launch the second phase of public consultation on the second cycle of River Basin Management Planning in Ireland. Public consultation commenced In July 2014, when the Minister published a draft timetable and work programme for the production of the second cycle of River Basin Management Plans (RBMP)s[1]. A summary of the timetable is attached at appendix 1 to this document.

The Minister is now seeking views on what are considered to be the significant water management issues for Ireland which will need to be assessed in the next round of RBMPs.

This public consultation document is divided into the following sections:

Part 1: Introduction
Part 2: Current condition of our waters
Part 3: Pressures on our water environment
Part 4: River basin management planning and the challenges ahead; and
Part 5: The environmental issues to be addressed.

The document is a first attempt at setting out the significant water management issues. The Department of the Environment, Community and Local Government (DECLG) has worked closely with the Environmental Protection Agency (EPA) in this exercise. This document has been informed by a variety of national and EU reports including those on water quality, drinking water quality, urban waste water treatment, bathing waters and protected habitats and species. It has also been informed by the experience and knowledge of public bodies involved in the management of water resources and of other key stakeholders, most recently at a pre-consultation workshop which was held in May 2015. Research work funded under the EPA Research programme[2] and Teagasc's agricultural catchments programme, conducted on behalf of the Department of Agriculture, Food and the Marine,[3] has also informed its preparation.

The consultation process initiated by this document is intended to encourage the active involvement of all interested parties and identification of the key management issues that need to be addressed in the preparation of the next set of river basin management plans. The Minster wants to ensure that the most important issues are identified early in the process and are then addressed during the preparation of plans. By its nature, much of the content of this consultation is technical and the Minister looks forward, in particular, to getting observations from experts and stakeholders in the field of water in the environment. However, the Minister is also anxious to engage with the general public and will, over the six month period for consultation, take steps to raise awareness of this process.

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[1] http://www.environ.ie/en/Publications/Environment/Water/FileDownLoad,38703,en.pdf
[2] EPA Water Research Programme
[3] Teagasc ACP Research programme

The main issues outlined in this document are summarised below.

River Basin Management Plans 2017-2021 Significant Water Management Issues for Ireland	
Societal Factors	**Environmental Pressures**
Affordability and Prioritisation Public Engagement Organisational Co-ordination Co-ordination of Plan Implementation Land Use Planning and Water Floods and Water Biodiversity Management and Water	Pollution from Nutrient Enrichment Water and Health Fine Sediment Physical Changes Abstractions and Flows Hazardous Chemicals Climate Change Invasive Alien Species Loss of High Status Waters

How to submit your views?

You can let us know your views by:

1. Emailing to waterq@environ.ie ; or
2. Sending a hard copy written response to the DECLG "WFD SWMI consultation, Water Quality Section, Department of the Environment, Community and Local Government, Newtown Road, Wexford".

The final date for responses in respect of this consultation phase is 18 December 2015.

Freedom of Information

The Department will publish the submissions received in response to this consultation paper and will use them to inform the decisions made in the preparation of the draft River Basin Management Plans that will be published at the end of 2016. Should you wish for your submission not to be published please make that clear when submitting it. However, it should be noted that, in the event of a request being made by any person under the Freedom of Information Acts, it may be necessary for the Department to disclose any or all comments received.

What happens next?

Work on the preparation of river basin management plans is currently underway by the relevant authorities. Submissions received in response to this consultation will be taken into account in the preparation of these plans. In addition:

- Draft river basin management plans will be published towards the end of 2016, and you will have a further opportunity to input and comment on these.

- After further consultation and consideration of all submissions received, final river basin management plans will be adopted by the Minister and published in 2017; those plans will run to 2021.

The plans will set out the environmental objectives (or goals) to be achieved to the end of 2021 together with actions (known as a programme of measures) that will ensure the environmental objectives are delivered in practice. The programme will include both basic and supplementary measures.

To summarise

The Minister wants you to have your say. You are therefore invited to consider the following:

- Do you agree that the issues facing Ireland's waters are correctly set out in this document?
- Are you aware of other issues that should be highlighted?
- What do you think are the most important issues to be addressed between now and 2021?
- How do you think the challenges identified should be tackled and what would you do first?

On each issue we are looking for your feedback as to what we should do and how we can work together to achieve healthy, resilient, productive and valued water resources that support vibrant communities.

Part 1: Water Framework Directive in Ireland

The Water Framework Directive (WFD) and River Basin Management Plans (RBMPs)

The WFD establishes a legal framework to protect and restore clean water across Europe and to ensure its long-term, sustainable use. It requires an integrated approach (i.e. across all sectors including agriculture, industry, spatial policy etc.) to the sustainable management and protection of water resources. It impacts on, and is equally impacted by, a diverse range of environmental plans and regulations. Ensuring the integration of all the aims of these plans is a particular challenge which is addressed later in this document.

The Water Framework Directive is linked to a number of other EU directives in several ways. These include Directives relating to the protection of biodiversity (Birds and Habitats Directives), directives related to specific uses of waters (drinking water, bathing waters and urban waste water directives) and to directives concerned with the regulation of activities undertaken in the environment (Industrial Emissions and Environmental Impact Assessment directives). More recent directives on topics such as Floods and the Marine Strategy Framework have significant linkages with the WFD which is also supplemented by the Priority Substances Directive and the Groundwater Directive. The Nitrates Directive forms an integral part of the Water Framework Directive and is one of the key instruments in the protection of waters against agricultural pressures. The Sustainable Use of Pesticides and the Sewage Sludge directives also provide for the control of materials applied to land.

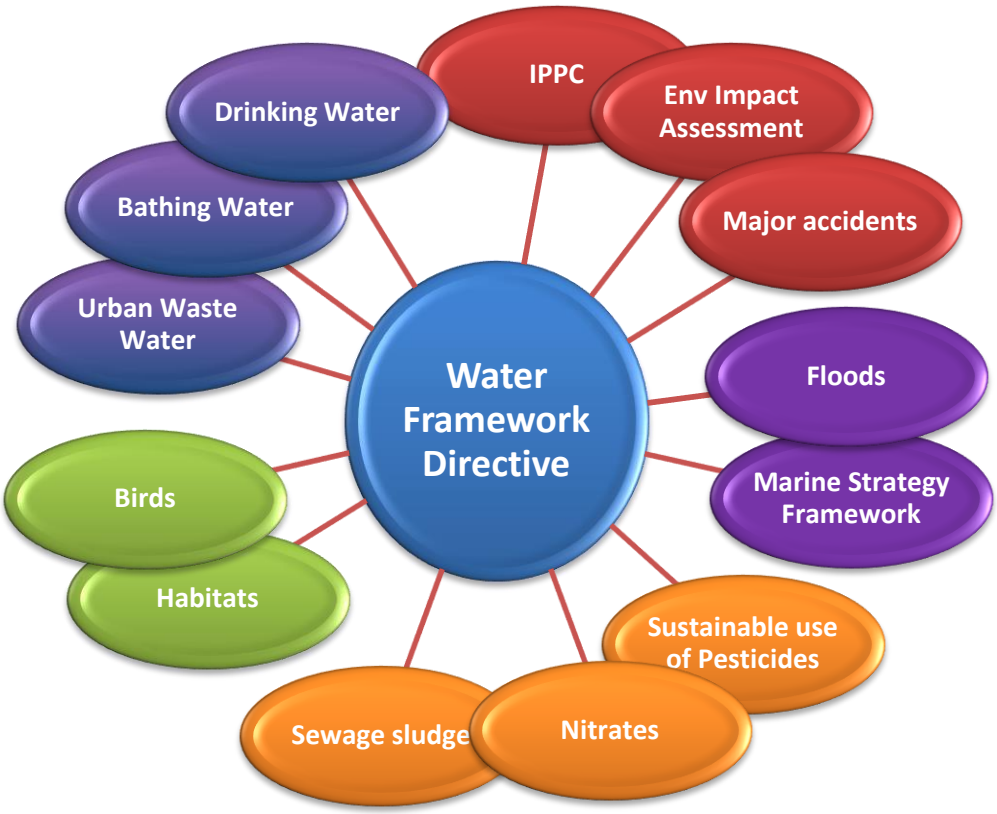


Figure 1: WFD interaction with other EU legislation

The WFD requires the preparation of river basin management plans by Member States across three river basin planning cycles *viz* 2009-2015, 2016-2021 and 2022-2027 during which management measures must be implemented so as to achieve good ecological status in all waters.

River Basin Districts (RBDs) must be established to form the basis for this co-ordinated approach. There are currently eight River Basin Districts (RBDs) on the island of Ireland. Four of these lie solely within Ireland: the Eastern RBD, the South Eastern RBD, the Western RBD and the South Western RBD. Three are international RBDs (IRBDs), the Shannon IRBD, the North Western IRBD and the Neagh Bann IRBD while the North Eastern RBD lies solely within Northern Ireland.

In July 2010, the first-cycle River Basin Management Plans (RBMPs) for Ireland were published, covering the period up to 2015. This marked the culmination of many years of effort in monitoring and assessing Ireland's surface and ground waters, classifying the waters according to their quality status, and setting objectives with a view to protecting and improving these waters in accordance with the WFD.

Work is now underway on the preparation of the next cycle of RBMPs covering the period up to the end of 2021. The RBMPs will describe the main pressures and activities affecting water status, set out the environmental objectives to be achieved up to 2021 and identify the measures needed to achieve these objectives. Draft RBMPs will be published by December 2016 and the plans will be finalised by the end of 2017.

In delivering the plans outlined above, Ireland is two years behind the timeframes stipulated in the WFD. Therefore, the second round of RBMPs in Ireland will be in place for 4 rather than 6 years and by the 3rd planning cycle we should be back in alignment with the WFD timeframe.

Lessons Learned from first round of RBMPs

The first round of RBMPs set very ambitious targets for water quality improvement and projected that the majority of water bodies would achieve good status by 2021. Part 2 of this document outlines the current status of water quality in Ireland which, although it compares very favourably with water quality in other Member States, falls well short of the targets set out in the first cycle of RBMPs. These targets were set at a time when the concept of River Basin Management Planning was new to Member States. Significantly also, in Ireland delivery of the first cycle of plans coincided with the recent severe economic downturn which affected our ability to deliver on the targets we had set ourselves. It will be important to ensure that, when preparing the next set of plans, we fully understand what needs to be done to deliver the priorities and targets we decide on and that we are in a position to implement the measures needed for delivery. Issues around prioritisation and affordability are covered further in Part 4 of this document.

There is general acceptance that the governance arrangements put in place to deliver the first cycle of river basin management plans did not work well. Arrangements were overly-complex and responsibilities were poorly defined with no single body having overall responsibility for developing the plans and overseeing delivery of the programmes of measures. . New governance arrangements

have been put in place for this 2nd cycle of plans and these are presented in the section dealing with Organisational Coordination in Part 4 of this document.

Also, as part of the review of governance structures, a report on the number and boundaries of the RBDs and underlying administrative areas was commissioned in 2012[4] and this report is available on the Department's website. The review was prompted by, among other considerations, broader proposals to reform local government and in the interests of efficiency. The report concluded that there are compelling reasons to amend the current RBD structures.

Accordingly, in the draft timetable and work programme for the production of the second cycle of RBMPs (published In July 2014), the Department advised that there will be a single national approach for the development of RBMPs for the second cycle and that the Eastern, South Eastern, South Western, Western and Shannon River Basin Districts will be merged to form one national River Basin District. In relation to the North Western and Neagh Bann International River Basin Districts a single administrative area will be established in the South for the purpose of coordinating water management with authorities in Northern Ireland (Figure 2).

[4] http://www.environ.ie/en/Publications/Environment/Water/FileDownLoad,38698,en.pdf

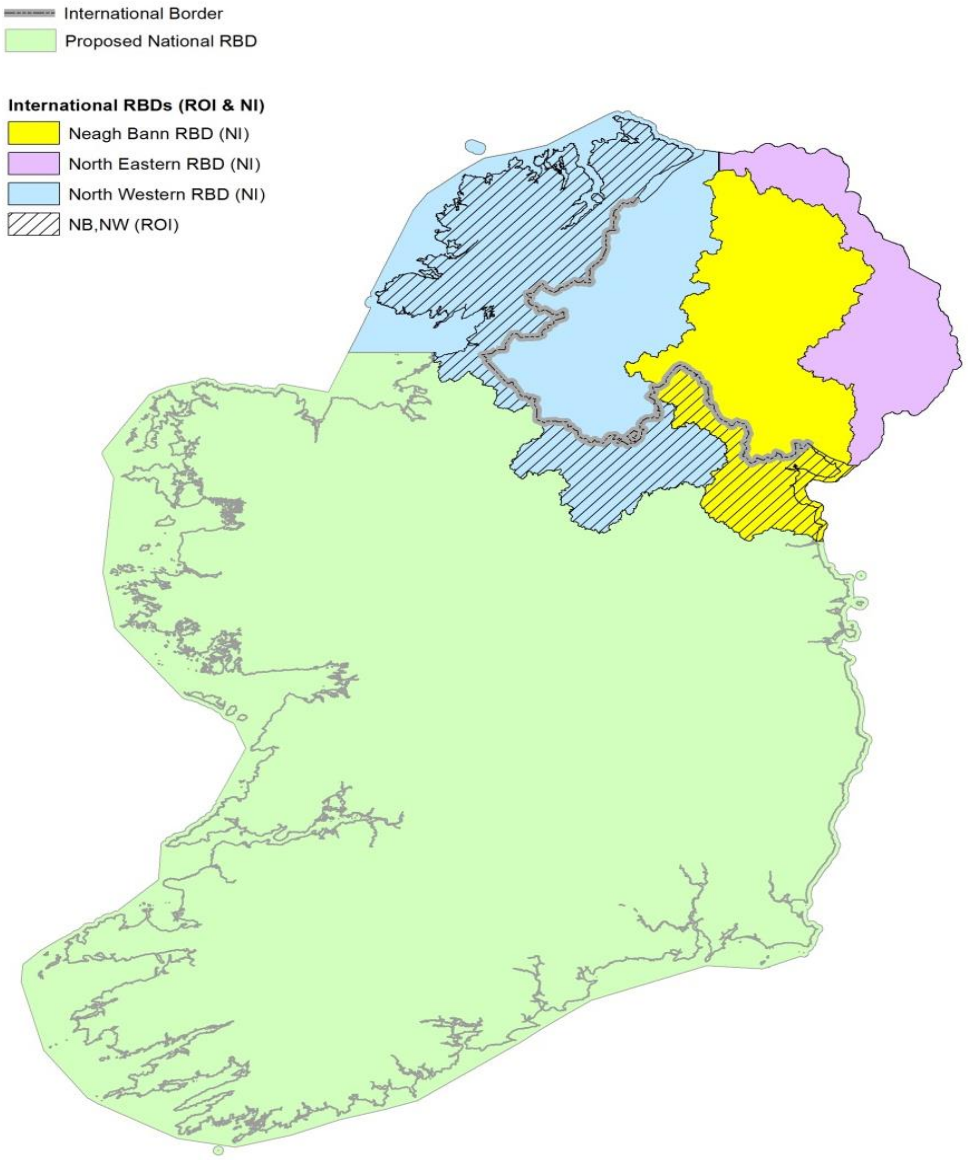
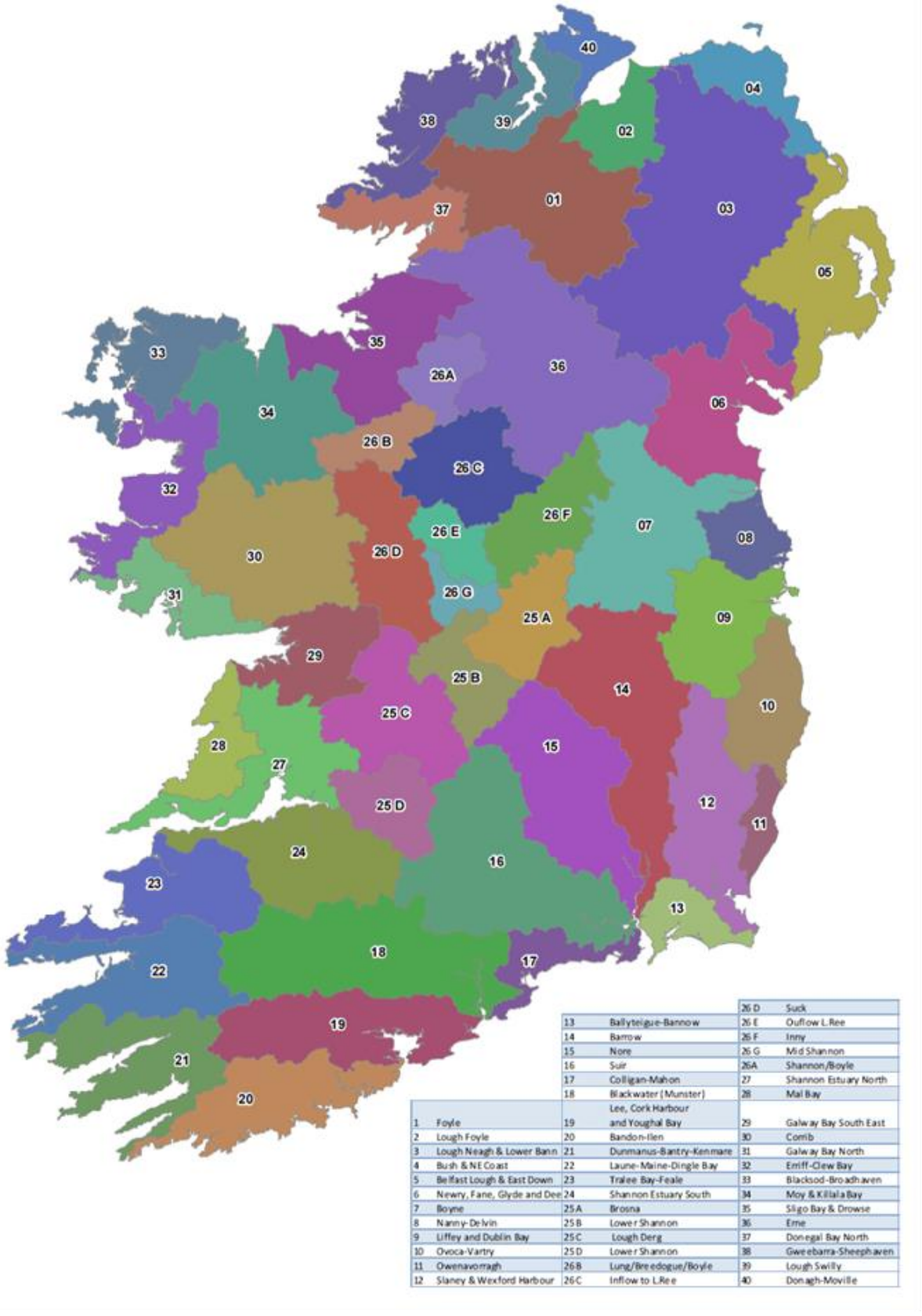


Figure 2: New National Approach to River Basin Management Planning

This new national approach will require assessment and planning to be carried out at a variety of scales and the EPA is tasked with leading on the technical tasks with the support and assistance of local authorities. It has been decided that a national river basin plan should be supported by sub plans at sub-regional scales. The country will be divided into 46 catchment management units (Figure 3). The units are, in the main, based on the hydrometric areas already in use with the River Shannon being subdivided on the basis of the catchments of its major tributaries. Within each of these catchments, assessments will be done at a sub-catchment scale to inform and assist with targeting of actions to address the issues identified (see figure 3)



			13	Ballytelgue-Bannow	26 D	Suck
			14	Barrow	26 E	Ouflow L.Ree
			15	Nore	26 F	Inny
			16	Suir	26 G	Mid Shannon
			17	Colligan-Mahon	26A	Shannon/Boyle
			18	Blackwater (Munster)	27	Shannon Estuary North
1	Foyle		19	Lee, Cork Harbour and Youghal Bay	28	Mal Bay
2	Lough Foyle		20	Bandon-Ilen	29	Galway Bay South East
3	Lough Neagh & Lower Bann		21	Dunmanus-Bantry-Kenmare	30	Corrib
4	Bush & NE Coast		22	Laune-Maine-Dingle Bay	31	Galway Bay North
5	Belfast Lough & East Down		23	Tralee Bay-Feale	32	Erriff-Clew Bay
6	Newry, Fane, Glyde and Dee		24	Shannon Estuary South	33	Blacksod-Broadhaven
7	Boyne		25A	Brosna	34	Moy & Killala Bay
8	Nanny-Delvin		25B	Lower Shannon	35	Sligo Bay & Drowse
9	Liffey and Dublin Bay		25C	Lough Derg	36	Erne
10	Ovoca-Vartry		25D	Lower Shannon	37	Donegal Bay North
11	Owenavorragh		26B	Lung/Breedogue/Boyle	38	Gweebarra-Sheephaven
12	Slaney & Wexford Harbour		26C	Inflow to L.Ree	39	Lough Swilly
					40	Donagh-Moville

Figure 3: Catchment Units for use in River Basin Management Planning

Part 2: Current Condition of Our Waters

While Irish groundwater and surface waters status is among the best in Europe there are many impacts that need to be addressed to bring all waters up to a satisfactory level and to protect those waters already in good condition. The water status assessment for 2010-2012 shows that 47% of rivers, 57% of lakes, 55% of estuaries and 7% of coastal waters (by area) were impacted (Figure 4[5]). Only 1% of groundwater bodies are at poor chemical status due to elevated phosphorus levels or due to historical contamination from mining activities and industrial development but there are still significant issues with bacterial contamination of groundwater. Bacterial contamination poses a risk to drinking water quality where sources are present, especially in private wells where there is no disinfection treatment in place. Eutrophication resulting from elevated nutrient concentrations continues to be the most widespread water quality problem in Ireland arising primarily from human activities such as agriculture and waste water discharges to water from human settlements including towns and villages. The level of pollution from hazardous substances is low.

Status of Irish waters (2010-2012)	High	Good	Moderate	Poor	Bad
Groundwater (% area) (interim status)	**n/a**	**99**	**n/a**	**1**	**n/a**
Rivers (% water bodies)	11.5	41	29	17.5	1
Lakes (% water bodies)	9	34	33	15	9
Transitional (% area)	3.6	41.1	43.4	11.4	0.5
Coastal (% area) *	63	30	4	1.5	1.5

*There are a number of unassigned coastal water bodies.

Figure 4 : Summary of WFD Status 2010-2012

Long term biological water quality monitoring of 13,300 kilometres of river channel since 1987 had shown a decline in unpolluted rivers from 77% in 1987-1990 to 69% in 2007-2009. However, the most recent assessments[6] show a welcome improvement in this picture with 73% of river channels unpolluted in 2010-2012 (up 4%) as illustrated in Figure 5. There has been an overall declining trend in high status rivers since monitoring began in 1987 from 30% of monitored waters down to 16% in 2009. The most recent data show a modest but welcome improvement between 2010 - 2012; 18% of

[5] Water quality in Ireland (2010-2012). In press.
[6] Water quality in Ireland (2010-2012). In press.

monitored waters are now at high status, which is still well below the levels found in the 1980s. Further monitoring will be required to determine if this is a developing trend. There has however been a 5% decrease in the number of lakes achieving acceptable status and more work is needed to determine what is causing this decrease in lake status. The level of transitional waters that are unsatisfactory remains high.

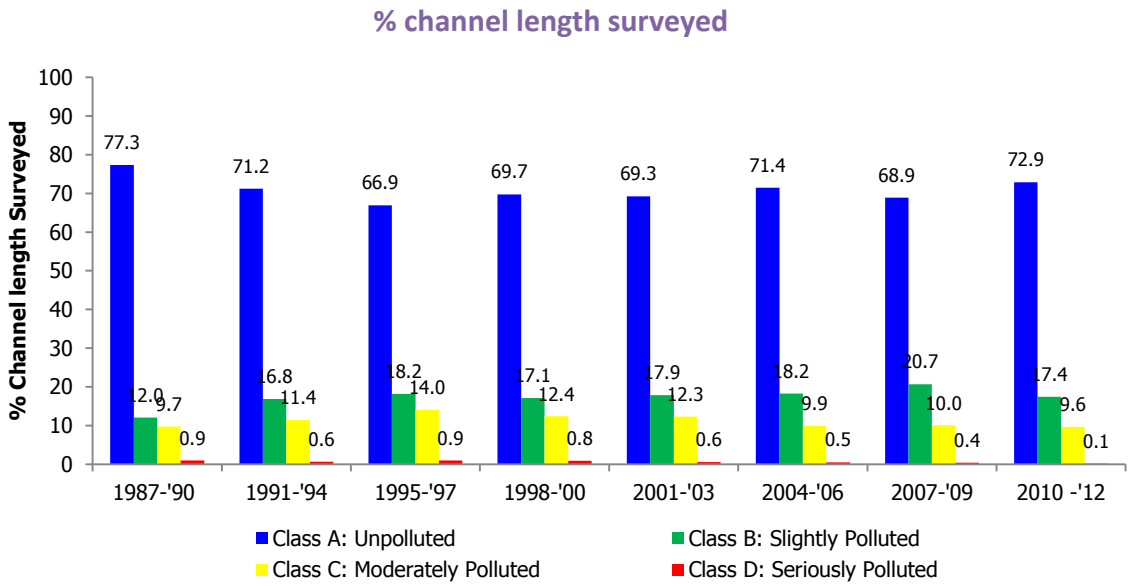


Figure 5: Trends in the 13,300km baseline showing the percentage of surveyed channel nationally in the four EPA biological quality classes

Slight pollution accounting for over 550 impacted river sites monitored between 2010 and 2012 with moderate pollution accounting for nearly 400 sites in the same period. The length of seriously polluted rivers has continued to decrease from the historical high of 235km in the mid-1980s and is now at 17km (in the current report for 2010-2012) compared to 53km for the period 2007-2009. There has also been a further decline in the number of fish kills reported in freshwaters (rivers and lakes) from 72 to 2007-2009 to 70 in 2010-2012.

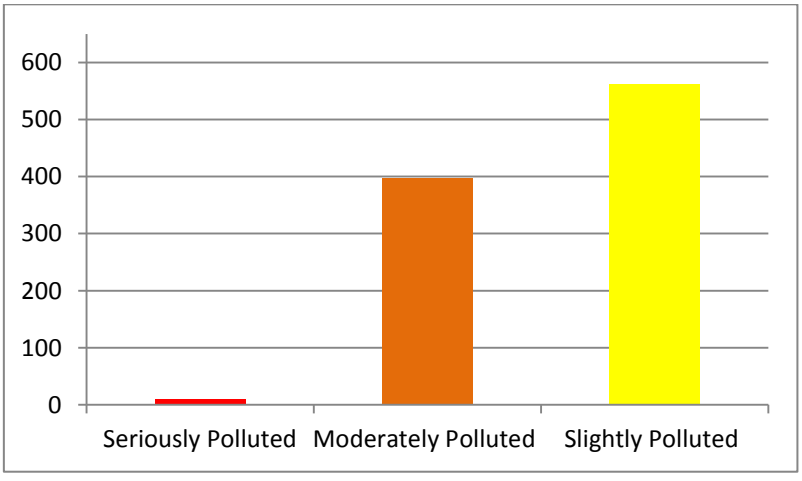


Figure 6: Total Number of impacted river sites

The suspected causes of pollution for 840 out of a total of 970 impacted river sites monitored between 2010 and 2012 were assessed. The two most important suspected sources of pollution in rivers are agriculture and municipal wastewater discharges with a small percentage of issues being due to industrial sources (Figure 7). Forestry, engineering works, aquaculture and peat harvesting also account for a small number of polluted sites.

The main contributors of nitrogen and phosphorus to waters are agriculture (88% of nitrogen and 49% of phosphorus) and municipal discharges (5% of nitrogen and 29% of phosphorus)[7]. The charts below give a breakdown of the suspected causes of pollution in each of the three pollution categories for the 840 sites assessed.

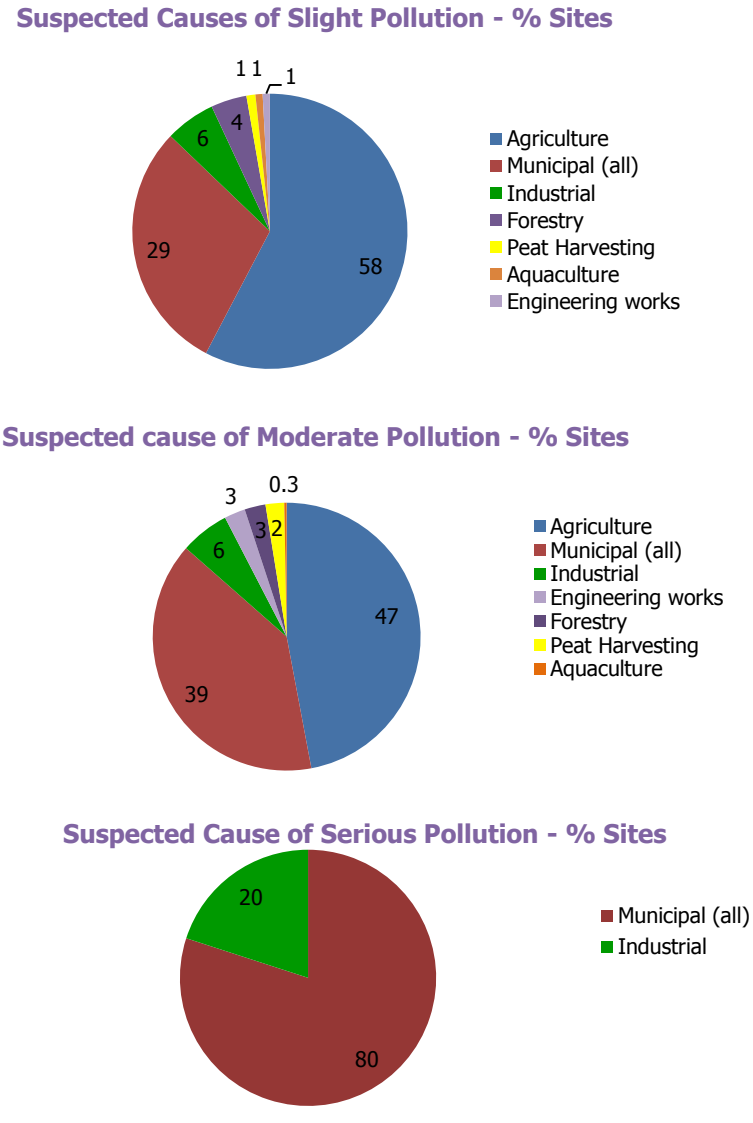


Figure 7: Percentage of Polluted river sites surveyed in 2010-2012 grouped by severity of pollution (Slight, Moderate and Serious) and suspected cause where assigned

[7] Water quality in Ireland (2010-2012). 2015. Environmental Protection Agency.

Another welcome trend is that the observed levels of nitrogen and phosphorus in waters, which give rise to eutrophication, have been mostly stable or decreasing since 2007 (Figures 8 and 9). The most pronounced downward trends are those for nitrogen in the east of the country. This is most likely due to improvements in farming practices and also due to improvements in the provision and management of urban waste water infrastructure. The general decrease in nitrogen and phosphorus levels and the associated reduction in eutrophication impacts is good news but the rate of improvement is modest and the ultimate challenge of achieving good status for all bodies of water as required by the WFD is an extremely challenging one.

Faecal contamination of groundwater continues to be a problem particularly in areas where groundwater is more vulnerable to pollution because of limited natural protection.

Overall the quality of Ireland's bathing water remains extremely high, of the 136 bathing waters, 118 (87%) were classified as being of 'Excellent' or 'Good' quality in 2014.

Ireland has designated 64 shellfish growing areas, where pollution reduction programmes have been put in place. 35% of designated shellfish waters with elevated faecal contamination may require additional measures to achieve the quality objectives.

Overall, the level of pollution from hazardous substances (e.g. toxic metals, pesticides and organic substances) is low in Irish rivers. The few identified exceedances of standards are from naturally occurring metals in known mineral rich areas, particularly where mining has been carried out. A number of pesticides, including Mecoprop and MCPA have been detected at low levels and this will need further investigation during this cycle of planning. Depending on the concentrations found, we may need to consider regulating some of these substances during the 2nd cycle. Apart from Mercury and Polyaromatic Hydrocarbons (PAHs)[8] the number of non-compliances with the environmental quality standards for priority substances is very low and not of significant concern. Work will also be required in this cycle of planning to look at new substances and associated standards controlled under the Priority Substance Directive 2013.

In summary, Irish water quality is good in comparison with other European countries but significant improvements are still necessary as we are not achieving all the standards that we should. Improving on the current situation will require significant work across society to ensure that we have a healthy and well protected water environment.

[8] Mercury and PAHs have been identified as ubiquitous Persistent, Bioaccumulative and Toxic substances (PBTs). at EU level (Directive 2013/39/EU). They occur widely in the environment on a global scale, due principally to atmospheric deposition. Where monitored in biota in Ireland they have shown widespread exceedances of biota standards.

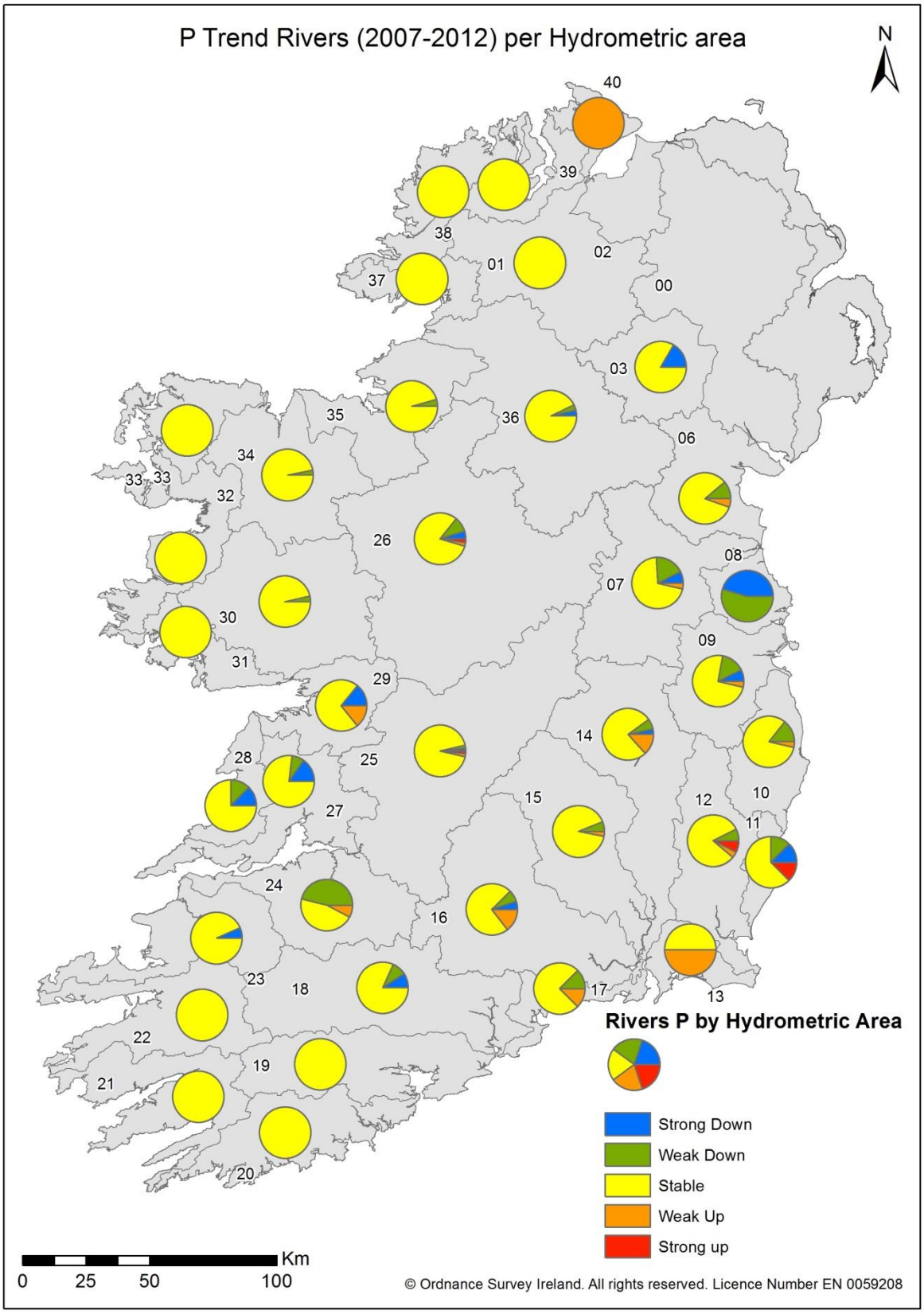


Figure 8: Map showing Orthophosphate trends 2007 – 2012 by Hydrometric area (Source, EPA)

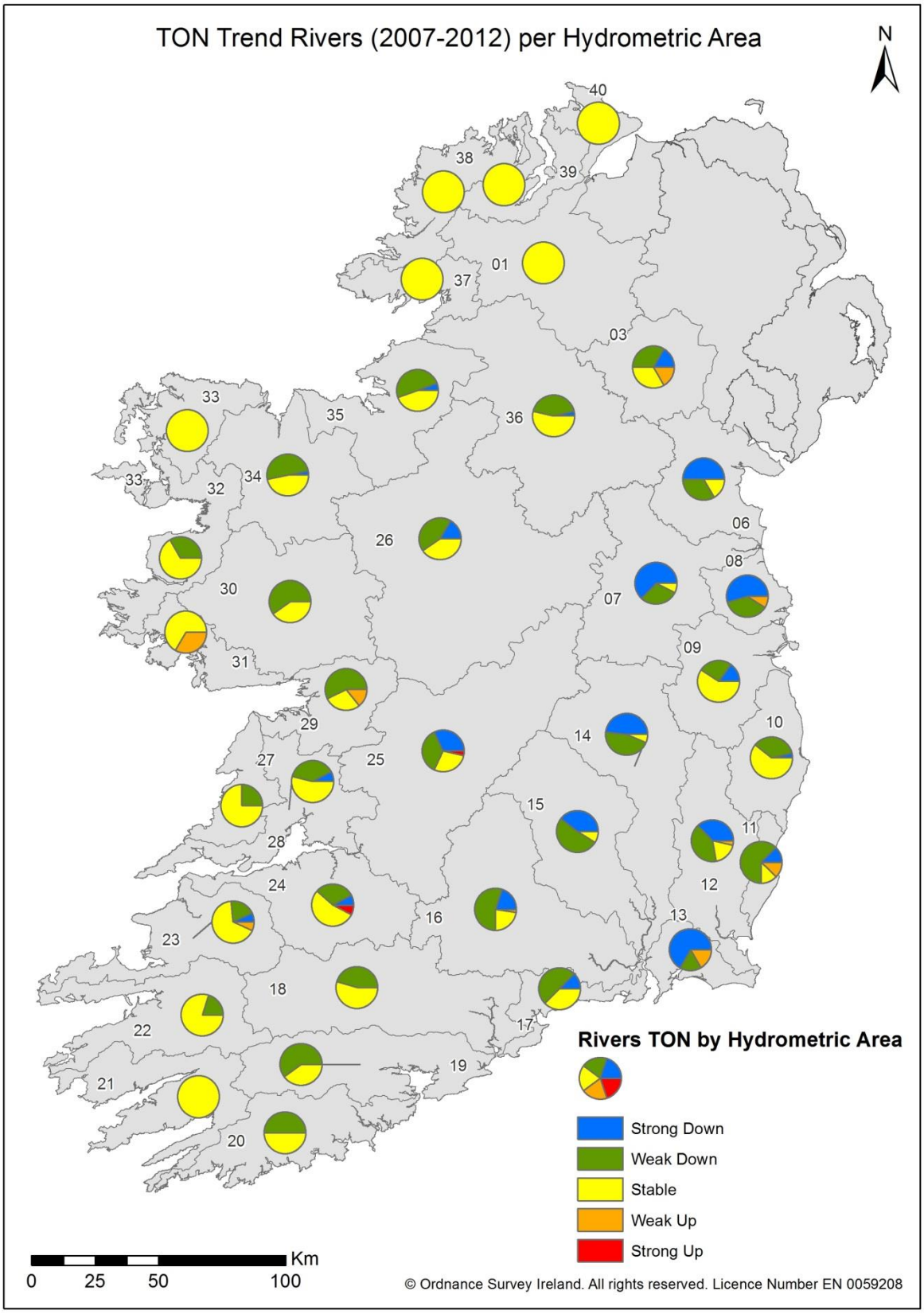


Figure 9: Map showing Total Oxidised Nitrogen (TON) trends 2007 – 2012 by Hydrometric area (Source, EPA)

Part 3: Pressures on Our Water Environment

In considering how to address the significant water management issues, the sources and pressures that give rise to them must also be considered. Much of the water pollution identified in Ireland is caused by excessive nutrients entering waters resulting in eutrophication. Therefore, controlling the sources of these nutrients will be key to improving water quality. However, eutrophication alone is not the only problem. Having a safe and secure supply of water for drinking purposes and preventing the spread of water-borne disease are key considerations that must be taken into account when managing our waters. Therefore, pressures impacting on drinking water sources; on designated bathing water sites and on shellfish growing waters must be addressed. Fine sediment, harmful chemicals, alien invasive species and changes to the physical environment also exert pressures on the water environment and have to be managed.

Urban Waste Water Discharges

Inadequate collection and treatment of urban wastewater discharges places a significant pressure on the natural water environment. The suspected cause of pollution at 34% at 840 of impacted river sites was municipal wastewater discharges. The urban waste water sector is a key potential source of nutrients (phosphorus and nitrogen) and pathogens (disease causing organisms).

There are significant deficiencies in Ireland's urban waste water infrastructure and achieving overall compliance with the Urban Waste Water Treatment Directive (UWWTD) will take a number of years to fully address. In 2013[9], nine large urban centres did not meet the UWWTD requirement to provide secondary treatment and raw sewage continues to be discharged at 44 urban areas. The number of seriously polluted river sites caused by urban waste water discharges was six in 2013 down from nine in 2009 and remains an issue. In addition, waste water discharges contributed to poor water quality at four designated bathing waters in 2013. However, complying with the requirements of the UWWTD alone will not always be sufficient to achieve good water status and more stringent treatment levels required under EPA licence will be needed in some cases to improve water quality and to prevent pollution. The EPA reported that 50% of 350 infrastructural improvements required in its licences before the end of 2013 were not completed. Addressing locations where urban discharges are causing water quality problems will be a key focus of the next cycle of RBMPs.

Agriculture

Agriculture accounts for 68% of land use in Ireland[10]. The most significant impacts from agriculture are the release of nutrients (phosphorus and nitrogen) and pathogens (disease causing organisms) into waters. Agriculture can also give rise to sediments entering waters due to damage to river banks and lake shores and from other types of land disturbance e.g. ploughing and overgrazing. Agriculture is believed to be the cause of pollution in 53% of impacted river sites assessed during the

[9] http://www.epa.ie/pubs/reports/water/wastewater/30086%20Urban%20Waste%20Water%20Web.pdf
[10] CORINE land cover 2012.

period 2010 to 2012. Agricultural activities are also the source of certain microbial vectors causing human illnesses including those caused by cryptosporidium and e coli bacteria.

Achieving the objectives of the Water Framework Directive in the context of increasing agricultural output under *Food Harvest 2020* will be a major challenge. Increased agricultural output will likely increase the pressures on waters which will have to be managed in a sustainable way within the context of the overall objective of protecting and improving water quality and meeting the requirements of the WFD. The outcome of research projects such as Teagasc's Agricultural Catchments Programme and the EPA-funded Pathways Project will yield a greater understanding of the pressures from farming and this research should yield practical measures for farmers and for catchment management in order to provide sustainable long-term solutions.

Other pressures that agriculture shares with other sectors include contamination of waters from hazardous chemicals, such as pesticides and sheep dip. A number of pesticides used in agriculture and in gardens were detected at low levels in a significant number of rivers during routine monitoring and requires further investigation during this cycle of river basin management planning and implementation.

Forestry

Ireland currently has 10.7% forest cover [11] (compared with an EU average of 38%) and over 50% of this is conifer plantation forests. Conifer plantation forests are recognised as a potential source of diffuse pollution to water courses and represent a risk to the ecological integrity of running waters. Forestry pollution sources accounted for 4% and 3% respectively of the suspected cases of slight and moderate pollution in river monitoring sites. Historically, the majority of Irish forests have been planted on agriculturally unproductive land in the uplands, from where many of our rivers either rise in or receive drainage from. The Department of Agriculture, Food and the Marine's forest policy review[12] notes there is significant capacity to increase forest cover in Ireland from the current level to 18% by 2030. It is recognised that forestry activity represents a potential source for sediment and for nutrients that can enter the watercourse and damage sensitive species including the freshwater pearl mussel. Significant care is therefore needed in the management of forestry developments during their life cycle. The Forest Service has detailed Catchment Forest Management Plans for eight priority freshwater pearl mussel catchments and, nationally, the Native Woodland Scheme will form an important part in protecting this sensitive species.

Homes and Gardens

Homes and gardens are sources of pressure on the water environment beyond those considered in urban wastewater discharges. According to the Central Statistics Office, on-site domestic waste water treatment systems collect, treat and discharge waste water from about one-third of all houses (500,000 households). If not managed and treated appropriately, domestic waste water may

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[11] http://www.agriculture.gov.ie/media/migration/forestry/forestryprogramme2014-2020/IRELANDForestryProgramme20142020230215.pdf

[12] http://www.agriculture.gov.ie/media/migration/forestry/forestpolicyreviewforestsproductsandpeople/00487%20Forestry%20Review%20-%20web%2022.7.14.pdf

contaminate private and public water supplies, groundwater, and surface water, causing harm to human health and the environment. Ireland has an estimated 160,000 drinking water wells and springs, and protecting these from contamination by domestic waste water is of high importance.

The 2013[13] National Inspection Plan for Domestic Waste Water Treatment Systems sets out actions being taken to respond to a European Court of Justice Judgment against Ireland on the regulation of domestic waste water. It will also form part of the actions by Ireland to protect water and the environment from domestic waste water discharges and will form part of Ireland's programme of measures under the WFD. This will be informed by research that is on-going on the impact of these systems on rivers and wells.

Recent legislation from Europe has created a watch list of substances that may be causing an issue in waters including a number of antibiotics and other medicines that are used domestically. Measures will be put in place during the next river basin management cycle to determine if these are causing a problem in the Irish water environment.

Industrial discharges

Industrial discharges vary in their characteristics based on the sector from which they come. Industrial pollution sources accounted for 5% of the cases of slight and of moderate pollution examined and were the suspected of causing serious pollution at two locations. The composition of industrial turnover in Irelands' economy has changed significantly in recent years. The food and beverage sector is an important one from a water quality perspective as its discharges tend to contain pollutant loads (including nutrients) similar to urban discharges. The implementation of Food Harvest 2020 will increase the need for industrial infrastructure to process this additional output. Expanding production capacity may be a challenge for the agri-food processing companies operating existing licensed sites over which the EPA and local authorities have a role in licensing and enforcement. The location of some existing processing sites could reach a limit where the capacity of receiving water is at or near capacity.

The majority of significant industrial discharges are licenced by the EPA with a number licensed by local authorities. Data from water monitoring between 2010 and 2012 indicates that industrial pollution is causing an issue at 5% of monitoring stations. Focus will be needed in the development of the next river basin management plans to ensure that these discharges are not causing a problem in the future.

Activities spreading alien invasive species

Alien invasive species[14] can cause impacts in the water environment, including destabilisation of river banks. Species of concern in waters include zebra mussel, asian clam, curly water weed and fish species such as chub[15]. They compete with local species and can displace them, thereby damaging natural aquatic ecosystems. The movement of boats and their trailers, and of fishing gear

[13] http://www.epa.ie/pubs/reports/water/wastewater/EPA_National_Inspection_Plan_2013.pdf

[14] http://invasivespeciesireland.com/wp-content/uploads/2010/11/Field_guide_to_invasive_species_in_Ireland_booklet.pdf

from one water body to another, increases the risk of the spread of these species. Zebra mussel was recorded in 70 of the monitored lakes and 1 heavily modified lake waterbody between 2010-2012 compared to 50 known populations in the 2007-2009 period suggesting that the zebra mussel continues to spread despite public awareness and biosecurity campaigns.

Japanese knotweed and Himalayan balsam are among the plant species causing damage to river banks thereby releasing more sediment into waterways. It is nearly impossible to eradicate these plant species but localised action can prevent their spread. A practice that can spread these species is the movement of soils from one location to another.

Part 4: River Basin Management Planning and the Challenges Ahead

River basin management planning is a complex and difficult process. The ultimate objective of river basin management plans should be to achieve beneficial outcomes for the environment and for society in a manner that is consistent with long-term environmental goals and that is fair and cost-effective for society as a whole. However, the water sector has many external links and is affected by, amongst others, policies related to energy, agriculture, land-use, economic development and public finance. Coherence in policy goals can be undermined by conflicting objectives and co-ordination across water-related sectors is essential if strategic goals are to be met. Stakeholders must therefore be engaged with the process so that solutions can be found to deal with these areas of conflicting interest.

Addressing these problems will require long term collaboration and action across society. This section seeks to draw out some of these intra-organisational and societal issues while also looking at economic considerations. We need your input to help fashion responses to these complex interrelated issues.

The relationship between environmental issues and societal pressures is complex. A water management issue can be linked to a number of environmental pressures and the response needed to address a problem can involve a wide variety of players. There are many linkages between sectors of society and the environmental issues identified (Figure 10).

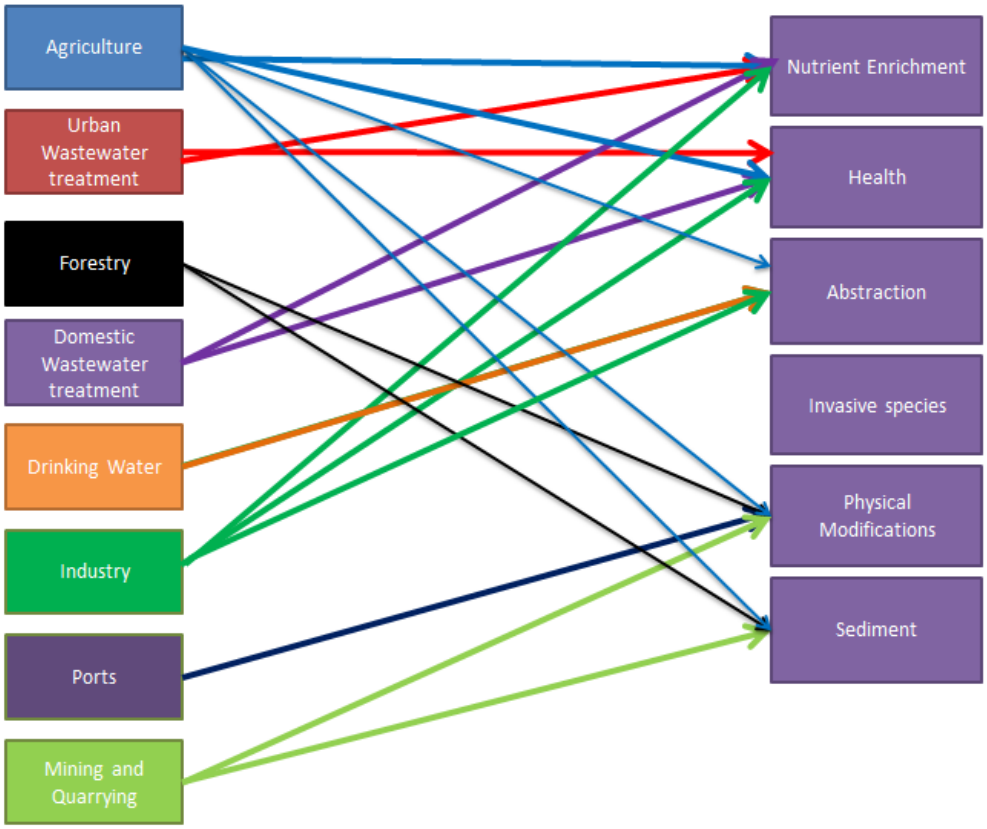

Figure 10: Links between sectors and water issues

Issue 1: Affordability and Prioritisation

What is the issue?

The Water Framework Directive is the first piece of European Community legislation that seeks to express legally binding objectives with reference to social and economic considerations. Efforts at river basin management planning to date have focussed more on the scientific issues and less consideration has been given to the socio-economic context which includes issues such as:

- the economic and social value of clean and well-protected water;
- affordability, how to prioritise measures and who pays for what and when in order to protect what is good and to improve what is less than good, within the constraints of available resources.

Very ambitious targets were set for the first set of plans and it is clear that the targets of the Water Framework Directive will not be met in the short term (i.e. by end-2015). Ireland faces significant challenges in achieving good status for all waters, in common with all other EU Member States, by the WFD's longer deadlines of 2021 and 2027. For our next cycle of plans therefore, it will be necessary to establish realistic but challenging time-bound objectives that can deliver significant progress towards the achievement of good ecological status. This should be supported by firm financial commitments for delivery and measures which are fair, affordable, economically efficient and financially sustainable.

It is likely that Ireland will require two full further cycles of the WFD to achieve its goals. Therefore, in this second cycle, it is the Department's view that once all the key issues are identified and potential suitable measures are designed our efforts within the second cycle will have to be carefully prioritised. Any such decisions will have to be based on the best evidence and they should be fully transparent and subject to public consultation.

Within this second cycle, the taking of prioritisation decisions will be difficult and there will certainly be different priorities between water quality stakeholders. The newly established Water Policy Advisory Committee (see Organisational Co-ordination at Issue 3 of this document) will have a key role in assisting the Minister for the Environment, Community and Local Government and ultimately the Government, in resolving priority conflicts between different sectors in order to define actions and investment priorities for the next RBMPs.

We would like you to consider

What are the issues you believe we should prioritise for the next cycle of river basin management plans e.g. the protection of high-status water bodies, improved management of bathing waters, the protection of drinking water sources?

Issue 2: Public Engagement

What is the issue?

It is clear that making our waters healthier and more productive will require collaborative and proactive preparation and implementation of plans. It will require local community groups, industry, agriculture, commercial organisations and state bodies to work together to achieve clean, safe and secure waters for the benefit of all users. It is essential that all parts of society work together to achieve better outcomes for our waters. This, however, is a complex process and public sector engagement with wider society and key stakeholders to protect waters has had limited success to date. It is an issue which has been raised in all WFD public consultations and organisations such as SWAN, the Sustainable Water Network, have made a number of submissions to the Department in this regard.

What is being done?

- In Ireland, we have a number of proactive community based organisations that have been successful in working together to improve their local environment including Clean Coasts, the National Federation of Group Water Schemes, Tidy Towns, national spring clean etc..
- Some local catchment groups have been established with assistance from public bodies or under their own steam like the IRD Duhallow Project[16] and some angling groups that have taken actions to manage their local waters.
- Local Authorities are setting up Public Participation Networks to help connect groups to meet their needs collectively.

How can we improve on this?

While some positive steps have taken place it is clear that more needs to be done. Many ideas were offered in the first round of public consultation and at a pre-consultation stakeholder event held in May 2015. The Department is committed to working with stakeholders to further explore and act on this important issue.

In this context, the Department is eager to support an Integrated Catchment Management (ICM) approach, whereby policy, research and community action are brought together at local levels to develop a real, shared understanding of the challenges facing individual catchments in order to then agree specific actions and implement them. Top-down implementation strategies are, typically, less successful than those with broad support and for which there is a shared vision and a sense of collective ownership. In the ICM context, this should involve *inter alia* local landowners, environmental NGOs, local authorities, business, regulators, farming and forestry, community representatives and schools.

Public participation is an essential part of this process and the anticipated appointment of a dedicated cadre of Local Authority Community Water Officers in the coming months is a critical step in facilitating better public engagement and broader awareness of sustainable water management.

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[16] IRD Duhallow LIFE Project

It is anticipated that these officers will engage with sectoral interests at regional level and with local communities and specific interest groups at sub catchment level.

However, given that Community Water Officers will not be in place until Autumn 2015, the Department intends to develop a short-term SWMI consultation plan, in conjunction with key stakeholders to ensure that all sectors are aware of the consultation and are able to input to the definition of the issues to be addressed. Possible building blocks of such a plan could include regional workshops / information sessions and web-based dissemination of additional WFD information and mapping and targeted usage of social media.

We would like you to consider

What recommendations do you have to improve public participation in water management?

Issue 3: Organisational Coordination

What is the issue?

As outlined in the introduction to this document, it is widely acknowledged that governance arrangements for the first round of RBMPs were overly complex with no single body having ultimate responsibility for delivery of the Water Framework Directive. A new governance framework has now been put in place that provides far better clarity on who is responsible for undertaking the tasks involved in preparing River Basin Management Plan. However, there are many other organisations involved in activities that have the potential to impact positively and negatively on the water environment and it is important to include them in any broader approach to integrated catchment management. They include government departments, state agencies, local authorities, public and private organisations, NGOs, and local community groups. The ability and capacity of public bodies to perform their statutory water protection and management duties creates the need for mechanisms to coordinate their activities so that positive impacts can be promoted and negative ones mitigated.

What is being done?

The Minister of the Environment, Community and Local Government has established a new three tier governance structure, the basis of which is set out in statute in the European Union (Water Policy) Regulations 2014 (SI 350 of 2015). The roles of the Minister for the Environment, Community and Local Government, the Environmental Protection Agency and local authorities are summarised in Figure 11.

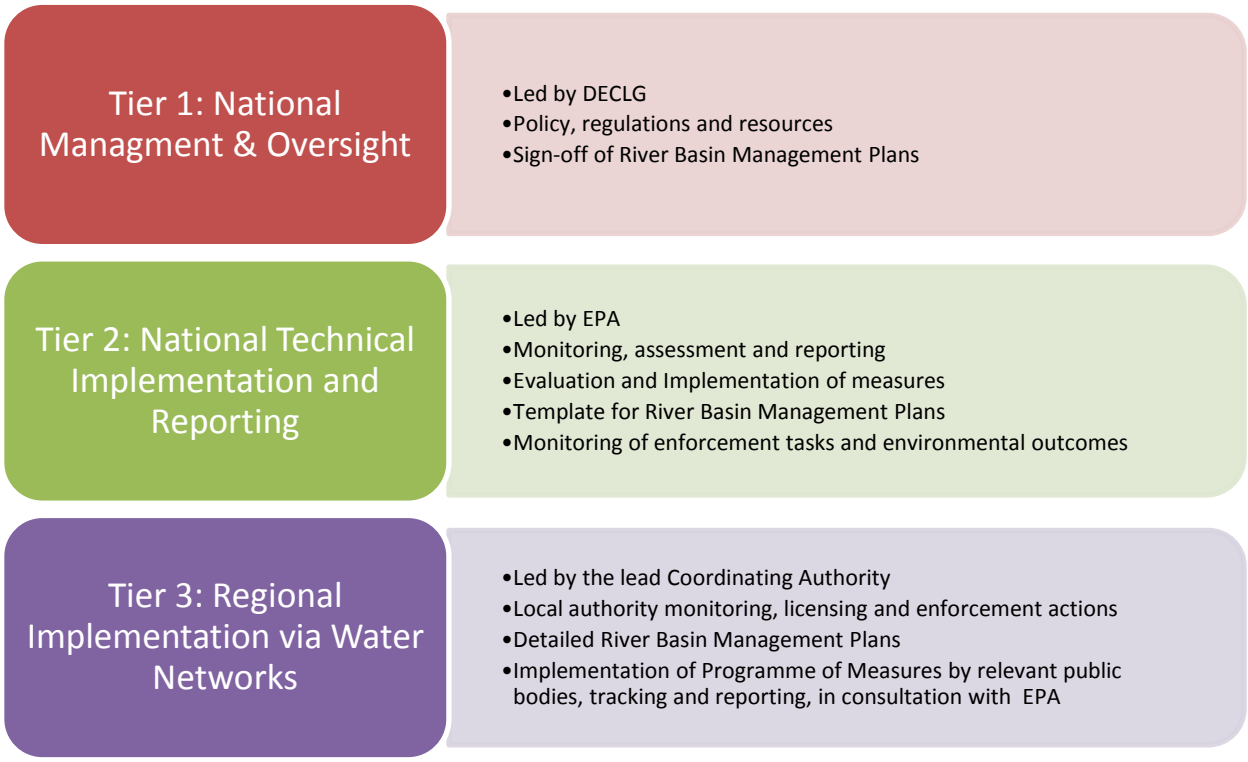

Figure 11: New Governance Structures for WFD

In addition to establishing a new governance structure the Regulations also established a Water Policy Advisory Committee whose role is to advise the Minister on policy in relation to:

(i) the preparation of river basin management plans,
(ii) the establishment of environmental objectives in relation to river basin districts,
(iii) the preparation of programmes of measures to achieve the environmental objectives,
(iv) other related matters concerning the protection and management of the aquatic environment and water resources; and
(v) to promote appropriate activities necessary to support the achievement of the objectives of the Water Framework Directive.

This committee, which is chaired by DECLG consists of representatives of all public bodies on which the WFD impacts. In addition, the Minister may invite any other body s/he considers appropriate to attend.

Water Policy Advisory Committee Membership

Department of the Environment, Community and Local Government
Department of Agriculture, Food and the Marine
Department of Communications, Energy and Natural Resources
Department of Arts, Heritage and the Gaeltacht (NPWS)
Department of Health
Environmental Protection Agency
County and City Management Association
Commissioners for Public Works
Commissioner for Energy Regulation
Health Service Executive

In addition to the above,

- The Minister has decided that a national approach will be taken to River Basin Planning
- The EPA has established a National Implementation Group and a Catchment Management Network to foster information sharing and collaboration across public bodies and agencies in the development of the new plans.
- Local Authorities have been given responsibility for regional coordination and engagement to progress the development and implementation of plans
- The Catchment Management Network will be establishing working groups on a variety of topics including characterisation, monitoring and measures (actions to deal with issues) to ensure consistent action across organisations.

We would like you to consider:

Are other coordination mechanisms in addition to the above required?

Issue 4: Coordination of Plan Implementation

What is the issue?

There are a number of national, regional and local plans and programmes that can impact on the effectiveness of water management actions. Each of these plans and programmes have their own timelines. In many cases these will be different from the timeframe for the new river basin management plans that will operate until the end of 2021. These include the Rural Development Programme 2014-2020, Food Harvest 2020 and Agri Food 2025, Irish Water's capital investment programme, Programmes of Measures under the Marine Strategy Framework Directive, the Construction 2020 Strategy, Flood Risk Management Plans, county level development plans and local area plans, forestry strategies and plans, biodiversity management plans, persistent organic pollutant management plans to name but a few. This document deals further with some of these plans but there is a need to continually focus on the alignment of activities under these plans to ensure that the environmental outcomes are 'win-wins' for both the water environment and the nation as a whole.

The newly established Water Policy Advisory Committee will have a key role in ensuring co-ordination across all these sectors and in assisting the Minister for the Environment, Community and Local Government in resolving priority conflicts which might arise.

What is being done?

- Strategic Environmental Assessments of relevant plans and programmes have given consideration to water management issues.
- Many of the existing plans in themselves have considered what impacts they will have on the water environment, albeit from their own perspective.
- Public consultations on these plans have raised issues relating to waters .

We would like you to consider:

What other plans and programmes do you think have a material impact on water management? How do you suggest we seek to improve coordination of activities between the various plans?

Issue 5: Land-use Planning and Water

What is the issue?

Planning encompasses land-use, spatial, urban, rural and physical planning and includes policies, zoning of lands and development/works and is hugely important in ensuring we have satisfactory water for all. Population projections indicate that the national population will increase from 4.6 million in 2011 to 5.2 million by 2031 (an increase of 613,000) with the majority of that increase taking place in the Greater Dublin Area. With these expected increases in population, close links between planning decisions and river basin management plans are critical to ensure that we do not create new water quality problems. Moreover planning encompasses many sectors including agriculture, forestry, peat & extractive industries and commercial and industrial development. It also interacts with water services, landscape, flood planning, coastal and marine management, climate change adaptability and tourism. The objectives of river basin management plans, however, have not always been easily incorporated into planning policy and practise. Effective integration between river basin management and land use planning is crucial to ensure that development is compatible with the objectives set in our river basin management plans. Figure 12 gives a brief overview of the water catchment scales and their comparative development plan scales.

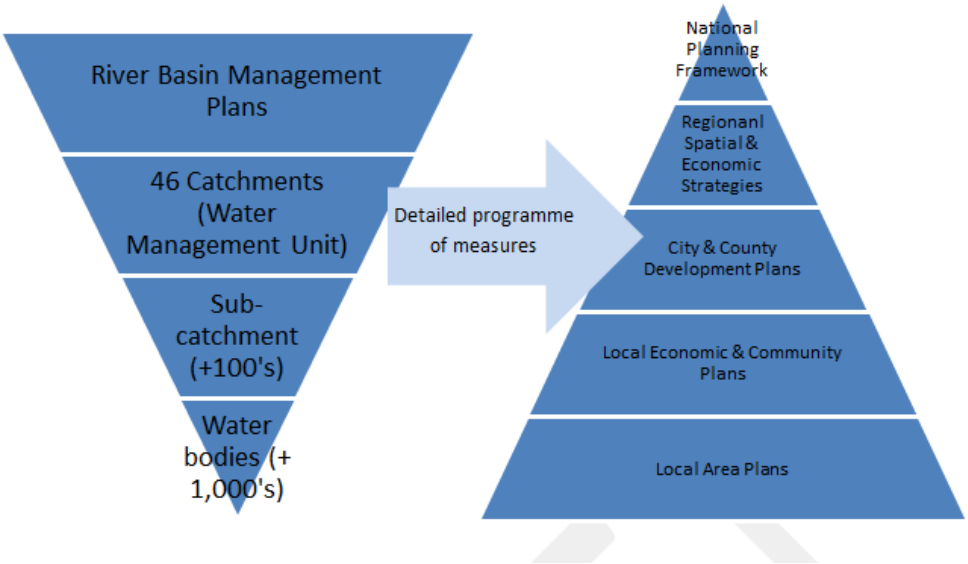

Figure 12: Hierarchical Structure of RBMPs and its interaction with Development Plans

What is being done?

- The Planning Policy Statement 2015[17] requires that planning supports the protection and enhancement of environmental quality by guiding development towards optimal locations from the perspective of ensuring high standards of water and air quality, biodiversity and the minimisation of pollution risk.
- 2010 Planning legislation improved how water management and the planning system are integrated by requiring development plans to support protection and enhancement of water quality, particularly with regard to securing the objectives of river basin management plans.
- The legislation also required that the location of development should be linked to existing wastewater treatment capacity and planned investment in capacity in the future.
- There has been an increasing move towards planning which is supported by evidence, for example, best location for development having regard to flood risk, or assessment of impact of proposals on protected habitats.
- Improved regulation of individual treatment plants which serve single houses (EPA Code of Practice: Wastewater Treatment Systems for Single Houses) and associated National Inspection Plan;
- Changes to planning legislation limiting extraction practices (e.g. peat) and further regulation of quarry activity in instances where they were operating without the benefit of environmental assessments.
- Stricter planning controls are now in place on reclamation and the infilling or drainage of wetlands[18].

We would like you to consider:

How can objectives of river basin (catchment) plans be included in land-use plans in a way that is effective? How can the requirements of land-use plans influence river basin plans? How can planning policy and practise be improved so as to enhance our water environment?

[17] http://environ.ie/en/PublicationsDocuments/FileDownLoad,39991,en.pdf

[18] Drainage and infilling of wetlands are regulated by the Planning and Development (Amendment) (No.2) Regulations 2011 and the European Communities (Amendment to Planning And Development Regulations) Regulations 2011.

Issue 6: Floods and Water

What is the issue?

Floods are a natural and inevitable part of life that pose a risk to human life and well-being, property and the environment. In Ireland, the Office of Public Works (OPW) is the Competent Authority for the implementation of the EU Floods Directive and has completed the Preliminary Flood Risk Assessment and is consulting on the flood maps. These will inform the preparation of the Flood Risk Management Plans that will be published for consultation early in 2016. The National Flood Policy Review and the EU Floods Directive require a more proactive, sustainable flood risk management approach with an increased consideration of non-structural flood protection and flood impact mitigation measures. It is nonetheless foreseeable that conflict may arise between the objectives of flood risk management and the WFD. While this is allowed for in legislation there are many opportunities to link activities under the two directives to achieve better river basin management. That being said, the programmes for the preparation of the River Basin Management Plans and Flood Risk Management Plans are not aligned for this cycle of implementation, and so particular efforts will be required to ensure coordination.

What is being done?

- Ireland's Flood Risk Management objectives include an objective to support the WFD and prevent deterioration in status, and if possible contribute to, the achievement of good ecological status/potential of water-bodies. This will help ensure that WFD objectives and obligations will be taken into account in the design of new structural measures such as flood defences, flood attenuation structures and tidal defences.
- Use of measures that are aimed at making or preserving room for water and increasing natural retention and storage capacity e.g. via local water attenuation measures, land use management, increasing the retention capacity of floodplains.
- A 2014 EU resource document called 'Links between the Floods Directive and Water Framework Directive[19]' identifies opportunities for integration and provides examples of these opportunities.
- An EU initiative Natural Water Retention Measures[20] has produced a practical guide to support the design and implementation of these measures.

We would like you to consider:

What else is needed to align flood risk mitigation and water quality management?

[19] EU Resource Document on links between FD and WFD

[20] http://ec.europa.eu/environment/water/adaptation/ecosystemstorage.htm

Issue 7: Biodiversity Management and Water

What is the issue?

Ireland has a wide diversity of protected aquatic habitats and species and our aquatic systems and wetlands support internationally significant populations of many species. The Birds and Habitats Directives are the key EU legislation to support the effective management of biodiversity and their implementation in Ireland is led by the Department of Arts, Heritage and the Gaeltacht. Aquatic species and habitats, including water dependant ones, feature strongly on the lists of those identified as being of poor conservation status produced by the National Parks and Wildlife Service[21]. For example the freshwater pearl mussel, which requires particularly high water quality, is recognised as being critically endangered in Ireland. There has been an overall decline in high status river water bodies since monitoring began in 1987. These and other high status waters contribute significantly to the overall species diversity and re-colonisation of species to river sites that were previously damaged. It is vital that these high status waters are fully protected and it is clear that further strengthening of the links between environmental protection and biodiversity protection needs to take place during this cycle of planning.

What is being done?

- Ireland has designated sites for protection of these sensitive species.
- Site-specific conservation objectives are being set for the habitats and species in those sites.[22]
- Sub-Basin Management Plans have been drafted for the freshwater pearl mussel.[23]
- The National Biodiversity Plan 2011–2016[24] is the main tool by which Ireland seeks to meet its EU biodiversity commitments. Improvements in water quality in the environment contribute towards the protection of high biodiversity.
- In 2013, the Department of Arts, Heritage and the Gaeltacht produced an update on the status of EU protected habitats and species in Ireland.
- The Burren Farming for Conservation Programme, and its predecessor Burren LIFE, successfully implements sustainable agriculture in the Burren in order to conserve the biodiversity of the region and the habitats designated under the Habitats Directive.[25].
- A new project commenced in July 2014 to promote sustainable land use practices in the Caragh and Kerry Blackwater areas for the conservation of the freshwater pearl mussel[26]
- The EPA Research programme continues to fund research in this area. For example, a 2014 UCD study on small water bodies: importance, threats and knowledge gaps.[27]

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[21] http://www.npws.ie/publications/article-17-reports

[22] http://www.npws.ie/protected-sites/conservation-management-planning/conservation-objectives and http://www.npws.ie/protected-sites/conservation-management-planning

[23] http://www.wfdireland.ie/docs/5_FreshwaterPearlMusselPlans/

[24] Ireland's National Biodiversity Plan 2011-2016

[25] http://www.npws.ie/research-projects/agri-environment-research

[26] http://www.npws.ie/research-projects/kerrylife

[27] Kelly-Quinn, M. and Baars, J.-R. 2014Foreword to 'Small water bodies: importance, threats and knowledge gaps'. Biology and Environment: Proceedings of the Royal Irish Academy 2014. DOI: 10.3318/ BIOE.2014.27

- The national biodiversity indicators inventory is currently being developed by the National Biodiversity Data Centre.
- The Common Agricultural Policy now includes 'greening' requirements in respect of Pillar 1 supports while Ireland's Rural Development Programme includes a significant and targeted Agri-Environment Scheme with an anticipated participation rate of 50,000 farmers.

We would like you to consider:

What, if any, are the major concerns you would have in relation to our aquatic biodiversity in Ireland?

Part 5: The Environmental Issues to be addressed.

This part of the document sets out the individual environmental issues that need to be addressed in the next cycle of river basin management plans.

Issue 8: Pollution of waters caused by nutrient enrichment

What is the issue?

The most widespread water quality problem in Ireland is elevated nutrient concentrations arising from human activities such as agriculture and waste water discharges to water from human settlements including from towns and villages. There are two nutrients of concern, nitrogen and phosphorus. Excessive nutrient concentrations can lead to accelerated growth of algae and plants leading to ecological impacts in rivers, lakes and marine waters such as reduced oxygen levels and loss of sensitive species. These impacts are collectively called eutrophication. Phosphorus tends to drive eutrophication impacts in freshwaters while nitrogen tends to drive impacts in marine waters.

The levels of nitrogen and phosphorus in groundwater, rivers, lakes, estuarine and coastal waters have been mostly stable or decreasing since 2007. This is most likely due to improved farming practices including actions taken by farmers in response to the Good Agricultural Practice Regulations, and through agri-environmental and investment schemes, and to improvements in urban waste water collection and treatment. While this is a welcome trend the rate of improvement has been slow. Teagasc research is indicating that there will be a lag between certain measures being implemented and the impact becoming visible in the quality of the receiving water. Future risks which threaten the modest improvements seen in recent years include the planned expansion in the agricultural sector under Food Harvest 2020 and increased nutrient loadings to waters from municipal sources due to population growth. Reports from the EPA[28] continue to highlight that Urban Waste Water is causing pollution of our waterways and have identified locations where nutrient treatment required under the Urban Waste Water Treatment Directive is not in place and where discharges are into freshwater pearl mussel catchments, sensitive waters and/or are impacting bathing waters.

The future challenges for water management will be to target actions in such a way that will prevent increases in nutrient loss to water and which will accelerate further reductions to levels that will not cause eutrophication impacts.

What is being done?

- A new national water utility, Irish Water, has been established. This utility provides an opportunity to take a comprehensive and strategic approach to targeting investment in and improving the management of urban waste water infrastructure.
- Ireland's Third Nitrates Action Programme is intended as a basic measure to limit pollution of waters from agricultural sources and to protect and improve water quality. The Action

[28] http://www.epa.ie/pubs/reports/water/wastewater/uww/UWW_Report.pdf

Programme is given effect by the European Union (Good Agricultural Practice for the Protection of Waters) Regulations 2014[29].

- Ireland has adopted a whole-territory approach to protecting waters under the Nitrates Directive that addresses both nitrates and phosphorus which can cause problems if they enter water. The Regulations lay down minimum slurry storage requirements on farms and Irish farmers have invested substantially in additional and/or improved storage in the last eight years.
- Under the Nitrates Action Programme for Ireland, land spreading of animal slurries and the application of chemical fertilisers can only take place during periods of crop growth. The Regulations set legal limits on the amount of nitrogen or phosphorus that may be applied to land based on crop needs.
- The new GLAS agri-environmental scheme, and the Targeted Agricultural Modernisation Scheme (slurry storage, trailing shoe) includes measures to reduce nutrient loss such as enhanced buffers zones and preventing animal access to waters. Other schemes under the Rural Development Plan provide the potential for funding for projects to protect and enhance waterways to support vibrant rural communities.
- Agri-food businesses are working with farmers to increase the sustainability of their farming practices, improving efficiency and thereby reducing nutrient loss.
- The Irish Farmers Association together with the EPA and other stakeholders have come together to put in place a SMARTFARMING initiative http://smartfarming.ie/ . This initiative seeks to help farmers to achieve efficient practices while at the same time improving on environmental practices.

We would like you to consider:

What other actions do you think could be put in place to reduce the pollution of waters caused by nutrient enrichment?

[29] http://www.irishstatutebook.ie/pdf/2014/en.si.2014.0031.pdf

Issue 9: Water and Health

What is the issue?

Microbial contamination may affect our drinking water supplies, private wells, bathing waters and shellfish areas and therefore our health. Microbial contamination is a term that is used to cover contamination from infectious material such as bacteria and viruses that can cause serious illness. The main causes of microbial contamination in water in Ireland are linked to urban wastewater treatment including emissions from combined sewer overflows and untreated discharges, agricultural activities such as land spreading of animal slurries and septic tanks.

Drinking Water

The EPA drinking water report for 2013[30] outlined the following issues for public water supplies: 40 Boil Notices were issued; E. coli was detected at least once in 10 supplies. The microbiological quality of private supplies (for example wells servicing houses), while improving, remains inferior to public supplies. Some water supplies are particularly vulnerable to contamination and may require additional protection measures in their catchment area. Nonetheless, overall the situation has been improving and there has been an 81% reduction *in E.coli* detections in treated water since 2007[31]. This is due to improvements in disinfection controls at public water treatment plants. Ensuring that there is adequate treatment to prevent Cryptosporidium entering drinking water is also important. A trend of increasing numbers of public water supplies affected by pesticides exceedances continued during 2013 with, the herbicide MCPA being the most common one notified.

Up to 30 % of private wells[32] in Ireland are contaminated by *E. coli* and a study[33] of 250 private wells found that 82% did not have an appropriate water treatment system in place. The Health Service Executive reports a growing number of cases of VTEC – a particularly nasty form of *bacteria* – and Ireland has the highest incidence of VTEC in Europe with the number of reported cases doubling between 2011 and 2013. In Ireland, rural families are commonly affected and consumers of water, from untreated private wells, are at much greater risk of VTEC than those who drink water from mains supplies. Analysis of cases finds that patients are up to four times more likely to have consumed untreated water from private wells.

In 2009 the WHO published detailed guidance on the implementation of the Drinking Water Safety Plan approach[34]. A drinking water supply is deemed 'safe' if it meets the relevant drinking water quality standards at the tap and 'secure' if a risk management system, a Drinking Water Safety Plan, is in place. These plans identify all potential risks to the water supply, from catchment to consumer,

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[30] http://www.epa.ie/pubs/reports/water/drinking/Drinking%20Water%20Report%20Web.pdf

[31] http://www.epa.ie/pubs/reports/water/drinking/Water%20quality%202013%20web%20copy_v2.pdf

[32] EPA, *Water Quality in Ireland 2007-2009 report*, 2010

[33] Hynds, P. D. 2012. *Private wells in Ireland: a quantitative assessment of groundwater quality, consumer awareness, contamination susceptibility and human health risk.* PhD Thesis, Department of Civil, Structural and Environmental Engineering, TCD.

[34] http://whqlibdoc.who.int/publications/2009/9789241562638_eng.pdf

and mitigation measures and procedures are put in place to manage these risks. The EPA has adopted the WHO's Water Safety Plan approach in relation to public drinking water supplies[35].

Bathing Waters

Good quality bathing water is a highly desirable natural resource for recreational use as well as being an important economic factor for tourism. Ireland possesses some of the best bathing waters in northern Europe. Overall the quality of Ireland's bathing water remains extremely high, with 128 of the 136 EU identified bathing waters (94%[36]) complying with new stricter EU standards and achieving at least 'Sufficient' water quality status in 2014. These standards are based on microbiological parameters (E.coli and Intestinal Enterococci) for the assessment of water quality. Of the 136 bathing waters, 118 (87%) were classified as being of 'Excellent' or 'Good' quality – up from 84% in 2013. The quality of many of the other monitored waters is also very high with almost 90% meeting the criteria for at least 'Good' quality. 7 bathing waters (1 inland and 6 coastal) failed to comply with the minimum standards in 2014 and were classified as being of 'Poor' quality. These will now be subject to a range of management measures to improve water quality.

Shellfish Waters

Shellfish can accumulate micro-organisms when grown in sewage contaminated water. When such shellfish are eaten raw or lightly cooked they can present a public health risk for consumers. Microbial contamination may have a severe impact on the commercial viability of shellfish growing areas as shellfish collected for human consumption have to meet strict standards and criteria before being placed on the market. If there is contamination, pre-treatment of the shellfish is required. Ireland has designated sixty four shellfish growing areas, where pollution reduction programmes have been put in place. The Sea Fisheries Protection Agency[37] carries out a monthly shellfish sampling programme in all active shellfish production areas with the results determining the classification of each area for the sale or consumption of shellfish. Depending on the results of the monitoring, shellfish growers may be required to treat the shellfish to meet requirements to allow it to be sold to market. Where monitoring finds significant levels of microbial contamination, the shellfish must be relayed for 2 months before retesting or can be heat treated.

What is being done?

- EPA continues to report annually on the quality of Drinking Water[38] setting out the issues with supplies.
- The Remedial Action List is a dynamic list of public water supplies in need of remedial action. In 2008 there were 339 supplies on the list and in May 2015 there were 118. Irish Water is working to reduce the risks to public drinking water and is addressing supplies where there are issues identified by the EPA in its remedial action list.
- EPA has adopted the WHO approach to protecting drinking waters (Drinking Water Safety Planning approach) and Irish Water has undertaken to prepare drinking water safety plans [39]

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[35] http://www.epa.ie/pubs/advice/drinkingwater/epadrinkingwateradvicenote-advicenoteno8.html

[36] http://www.epa.ie/pubs/reports/water/bathing/EPABathingWaterReport2014.pdf

[37] http://www.sfpa.ie/SeafoodSafety/Shellfish/ClassifiedAreas.aspx

[38] http://www.epa.ie/pubs/reports/water/drinking/Drinking%20Water%20Report%20Web.pdf

[39] "Drinking Water Safety Plan: Implementation Plan 2014-2016"

for 135 public water supply zones serving a population of over two million by the end of 2016.

- The EPA and HSE are raising awareness of the risks to private wells and has developed a new assessment tool - 'Protect your Well' - for well owners to assess their well and ensure they are not putting their health at risk.
- Legislation now places responsibility on owners of septic tanks and other domestic treatment systems to ensure that their system is properly operated and maintained. A national inspection plan is being implemented, overseen by EPA, and inspections are targeted in areas where the potential risk from septic tanks is likely to be greatest.
- The EPA website Splash[40] displays information on beach monitoring and advises of any restrictions or prohibitions on swimming that are in place. A recent Twitter-based incident alert service @EPABathingWater allows the public to be informed of the start and end of incidents.
- Bathing waters classified as being of 'Poor' quality will now be subject to a range of management measures to improve them.
- The Department of the Environment, Community and Local Government has put in place pollution reduction plans for the 64 designated shellfish protected areas and where issues are identified measures are put in place to rectify them.
- The Sea Fisheries Protection Agency undertakes surveys on all classified shellfish beds to ensure that shellfish placed on the market are fit for human consumption[41].
- EPA urban waste water licenses and certificates set out the improvements needed at treatment plants and sewer networks. However, significant challenges remain in relation to improving urban waste water treatment[42].
- *Cryptosporidium* risk screening methodology has been published by the EPA to assist drinking water suppliers in prioritising supplies that are at high risk of contamination with *Cryptosporidium* and to identify high risk factors (including catchment and source protection factors), which can be mitigated to reduce the risk associated with the supply[43].

[40] http://splash.epa.ie/

[41] http://www.sfpa.ie

[42] 38 of Ireland's Largest Sewage Discharges Fail to Meet Treatment Standard

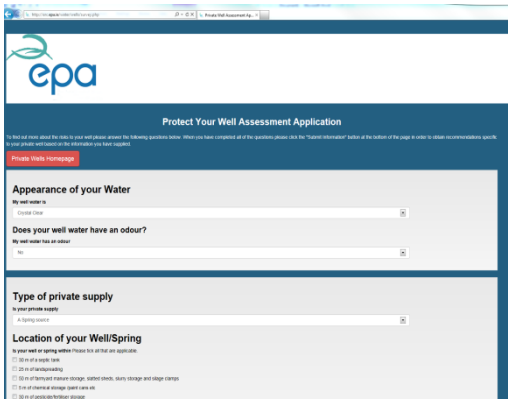
[43] Public Water Supplies Handbook :: Environmental Protection Agency, Ireland

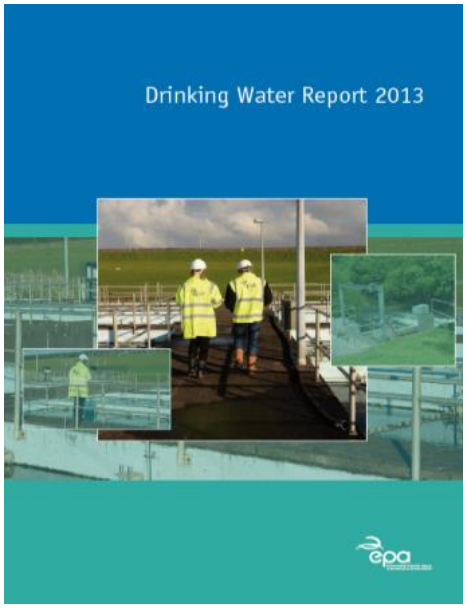
What can you do?

- Make sure that your own septic tank or domestic wastewater treatment system is working correctly and maintain it.
- If you have a well, check out the EPA's 'Protect your Well' application and ensure that you protect your well from surface water entering it.

We would like you to consider:

What further actions would you suggest be taken to reduce health risks from waters?





Issue 10: Fine Sediment

What is the issue?

Fine sediment plays an important role in the water environment. It provides habitat for aquatic ecosystems while also providing a food resource and temporary refuge for some aquatic species. However, excessive fine sediment in the incorrect location is a major issue because its accumulation on the bed of a river or lake can smother freshwater and marine life. Some aquatic species are particularly sensitive to high levels of fine sediment including salmon and freshwater pearl mussels. All designated populations of freshwater pearl mussels in Ireland are currently at poor conservation status and siltation is a significant contributing factor. Fine sediment can also carry contaminants, such as phosphorus and toxic pollutants, and alter water quality conditions impacting ecosystems. Sources of sediment in Ireland include river bank erosion, tillage operations, land drainage, forestry harvesting, peat extraction and urban development. Monitoring the levels of sediment being transported through aquatic systems is complex and as a result the amount of available information for Irish catchments is very limited.

What is being done?

- The EPA is funding a large scale research project (SILTFLUX[44]) to gather comprehensive information on the ecological impacts of siltation. This project is also developing methods for monitoring sediment transport in aquatic systems to inform future management decisions. Other research is also considering how to address sediment issues including Teasgasc's Agricultural Catchment Programme and the now completed PATHWAYS project.
- Community groups are now identifying sediment issues and implementing practicable solutions such as putting in place silt traps, removing alien species and employing soft bank protection that trap sediment (e.g. IRD Duhallow)
- The new GLAS Agri-Environmental Scheme contains measures to prevent sediment loss including fencing to prevent bovine access to waters, development of buffers along waterways and wild bird cover that can be located near waterways.
- The Forest Service, within the Department of Agriculture, Food and the Marine, has developed various guidelines for different activities[45] to ensure damage to the environment is minimised including ones dealing with forestry and water quality, forest harvesting and Freshwater Pearl Mussel requirements.
- The Office of Public Works Drainage work programme[46] is operated under a set of environmental management protocols and standard operating procedures.

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[44] http://77.74.50.157/siltflux/

[45] http://www.agriculture.gov.ie/forestservice/publications/and http://www.agriculture.gov.ie/forestservice/environmentalinformation/

[46] http://www.opw.ie/media/Arterial%20Drainage%20Maintenance%20&%20High%20Risk%20Channel%20Designation%20Draft%20Programme%202011-2015.pdf and http://www.opw.ie/en/media/OPW%20Environmental%20Management%20Protocols%20&%20SOPs%20April%202011.pdf

What can you do?

- Move livestock feeders and drinking troughs away from streams and rivers, limit livestock access to watercourses and use cover crops to reduce erosion and retain soil nutrients.
- If a river is undergoing channel maintenance for whatever reason, move dredged material well away from the banks. Avoid machinery entering the channel in order to minimise damage.
- Create a buffer strip of vegetation along a watercourse to minimise erosion and filter runoff.
- Ensure building sites and farm roadways have sediment traps.

We would like you to consider:

How do you think this issue should be tackled?

Photo 1: Example of poor land management leading to excess sediment entering the channel. (Bryan Kennedy EPA), 2013.

Photo 2: River rehabilitation measure using trees for bank protection (Duhallow IRD 2014).

Issue 11: Physical Changes

What is the issue?

Many rivers, lakes, estuaries and coastal waters have been physically modified by human activities over time. While these alterations have allowed the provision of drinking water, flood protection, land drainage, hydropower, navigation and transport, they can create adverse impacts on the natural conditions of our water bodies in some places. This in turn can affect aquatic ecosystems. Such modifications include flood protection measures and; built structures (ports and piers). Almost 40% of Irish rivers are affected by some form of physical modifications. Impoundments and flow regulation change natural flow and sediment conditions that can alter the ecosystem structure and may reduce habitat diversity. Weirs impinge on migration patterns of certain fish species and reduce food supply to many animals downstream of the barrier. Channelisation and in-stream dredging can lead to significant physical changes and reduce biodiversity and damage habitats. They alter natural river flow and can give rise to the accumulation of sediment due to channel widening or erosion of the bed and banks as a result of channel deepening. Shoreline reinforcements and sea defences may also prevent the natural migration of the shoreline and result in habitat loss.

Most EU member states have developed biological indicators to detect eutrophication pressures. In contrast, there is less understanding of the hydromorphological conditions necessary to support good ecological status. This issue is complex and work is on-going across the EU to improve our understanding. Recent results[47] show, however, that monitoring tools currently in use across the EU are not useful for detecting habitat alteration in rivers. The REFORM project, which has provided a large amount of compiled knowledge, will assist in developing ecological tools capable of detecting impacts from morphological impacts. Several Irish studies commissioned to support implementation of the WFD have highlighted the need to introduce an authorisation system to control activities involving physical modifications to surface waters (e.g. flood defences, port development, hydropower development, arterial drainage). It is intended to address this deficiency through the establishment, via legislation, of a new single comprehensive regulatory framework. However, the current poor understanding of the relationship between morphological alterations to surface waters and the ecological impacts and the scale of impact in Ireland has contributed to delays in the development of an authorisation system. Work is on-going to improve our understanding of these complex environmental pressures.

[47] http://www.reformrivers.eu/

Photo 3: Example of OPW River Enhancements works

What is being done?

- OPW has developed a set of environmental management protocols and standard operating procedures for their National Rivers Drainage Maintenance Programme to ensure that impacts due to drainage maintenance works are reduced. Inland Fisheries Ireland (IFI) also support the OPW in ensuring that the OPW's channel maintenance and capital works are conducted in a fish friendly way.
- An Environmental River Enhancements programme is in place focused on the enhancement of drained salmon and trout rivers. This programme is funded by the OPW with IFI providing expertise in a number of areas including riverine morphology, fish ecology and monitoring.
- IFI is developing a national inventory of barriers to fish migration which rates the likely impact of the barriers on migration.
- Work is underway to research the relationship between morphological alterations to surface waters and their ecological impacts to inform the development of tools to assess the physical conditions of rivers, lakes and estuaries and coastal waters.
- An information leaflet, *Minding our watercourses*,[48] was produced by IFI and Teasgasc to establish best practice in the management of watercourses on farms.
- A number of groups (e.g. Duhallow IRD, Mulkear LIFE, Slaney Rivers Trust) have focussed on implementing river rehabilitation measures to improve habitat for various aquatic species.
- Legislation is in place to protect the physical aspects of our water environment [49]

We would like you to consider:

Are there other issues regarding physical modifications on waterways that should be highlighted now?

[48] http://www.teagasc.ie/publications/view_publication.aspx?PublicationID=3316

[49] (EU: Marine Strategy Framework, EU Habitats Directive and associated appropriate assessments. National: Environmental Impact Assessment (Agriculture) Regulations 2011, Planning and Development (Amendment) (No. 2) Regulations 2011).

Issue 12: Abstraction and Flows

What is the issue?

Abstraction is the removal of water, permanently or temporarily, from water bodies such as rivers, lakes, estuaries, canals, reservoirs or from aquifers. Abstraction can alter the natural flow regime either by abstracting from the surface water or by groundwater pumping, depleting groundwater levels and consequently affecting flows to springs, wetlands, lakes and rivers. The natural flow regime can also be changed where rivers have been managed or modified for the purpose of water supply or power generation. Abstraction and other changes to river flows can put pressure on the aquatic environment. In some cases, the remaining flows may not be sufficient to support a healthy ecology. Studies suggest that abstractions are not a widespread significant pressure on water in Ireland but a small number of localised groundwater abstractions issues have been identified. Monitoring networks were supplemented in these areas to assess the impact and recommendations have been made in relation to sustainable abstraction volumes. Furthermore, abstraction appears to be an issue in a number of freshwater pearl mussel catchments. In the future, population growth and development are likely to require more water to be abstracted. Knowledge of abstractions is critical for effective water management, in particular where abstractions may cause localised problems. The linkages between aquatic ecology and river flow / lake level are not well understood, and research has been initiated to establish criteria for ecological flows and lake levels in our surface waters. This research aims to provide a framework by which focused monitoring programmes can be put in place on those rivers and lakes where abstractions may have a significant impact on water quality and aquatic ecology.

What is being done?

- EU guidance[50] on ecological flows was recently published. The Working Group that developed the guidance defined ecological flows as representing a hydrological regime consistent with the achievement of the environmental objectives of the WFD in natural surface water bodies.
- The existing surface water flow monitoring locations facilitate the estimate of flow or water level for the majority of rivers and lakes in the country but this network may need to be supplemented to enable flow estimates, in rivers and lakes that are sensitive to fluctuations in water level and flow.

[50] https://circabc.europa.eu/sd/a/f80fd9d5-05b7-40c6-a166-af11b279f423/CIS%20GD31-%20EFlows.pdf

We would like you to consider:

Is the abstraction of waters a significant issue in your area and, if so, do you have views on how this might be addressed?

Photo 4: Low flow issue at Cappanacreha (EPA).

Issue 13: Hazardous Chemicals

What is the issue?

Hazardous chemicals and heavy metals can enter the water environment via many routes. They can come from disposal of household products, use of chemicals in agriculture and gardening through to large scale discharges from industrial or urban waste water treatment plants or from extractive industries. Some of these are toxic and have the potential to build up in the environment, ultimately accumulating in animals and / or our food chains. They can also make their way back into drinking water. Therefore, these chemicals and heavy metals must be managed and activities undertaken to control and prevent their entry into the environment. In general, these chemicals do not appear to be a particular problem in Ireland.

The level of non-compliances with Environmental Quality Standards as assessed at several hundred sites for hazardous chemicals is low in Irish rivers. The main exceedances arose due to naturally occurring metals in known mineral rich areas, particularly where mining has been carried out. A number of pesticides, including Mecoprop, MCPA and 2 4-D were detected at low concentrations at a large number of river monitoring sites during routine monitoring. The significance of the pesticide levels detected will be assessed further and may require the implementation of further controls through, inter alia, the development of environmental quality standards and associated measures for these substances in water.

Two substances, mercury and Polyaromatic hydrocarbons (PAHs) showed widespread exceedances of environmental quality standards. The concentrations are consistent with other studies across Europe indicating the widespread distribution and persistence of these substances which are a result of airborne deposition from fossil fuel combustion is widely regarded as the principal source. Both substances have been identified at EU level as ubiquitous PBT (Persistent, Bioacummulative and Toxic) substances. They can be found for decades in the aquatic environment at levels, even if extensive measures to reduce or eliminate emissions of such substances have already been taken. They are also capable of long-range transport and are largely ubiquitous in the environment. Therefore, non-compliant results do not infer specific issues local to a water body or indeed river basin district. Apart from these two ubiquitous PBTs (mercury and PAHs) the amount of non-compliances with the Environmental Quality Standards for Priority Substances and Priority Hazardous Substances is very low and not of significant concern.

Further candidate Priority Substances and Priority Hazardous Substances are currently being considered in a review at EU level. A number of pharmaceuticals are included for consideration. The likely presence and level of these candidate Priority Substances / Priority Hazardous Substances in Irish waters needs to be investigated. Pharmaceuticals in waters are likely to be an emerging environmental issue. The EPA will continue to review and update the list of chemicals being assessed in the environment, in relation to on-going changes of use in Ireland and elsewhere in Europe.

An Inventory of Emissions to Waters in Ireland in 2013 concluded that overall, Ireland appears to have relatively few problems associated with the presence of Priority / Priority Hazardous substances in surface waters. This is due, in part, to the limited legacy of pollution from heavy

industry. Improvements in the levels of enforcement activity and compliance, together with the provision of extensive wastewater treatment infrastructure, have undoubtedly also had an impact on the occurrence of such pollutants. While the principal challenge to our rivers and lakes remains that of nutrient enrichment there are significant challenges in ensuring that Priority / Priority Hazardous substances do not impact unduly on water quality in the future.

In relation to historic contamination at industrial sites, the EPA has made amendments to licence conditions and has developed guidance to aid licensees to assess the degree of pollution coming from their activity. The EPA plans to assess and follow up on licensee responses in relation to pollution from their activity.

National Environmental quality standards have been established for 16 specific pollutants. Specific pollutants are toxic substances that are discharged in significant quantities into the water environment at local or national level and for which standards have not been developed at EU-level. These include a range of commonly used pesticides, plant protection products, metals, organic solvents and Cyanide. The current list of substances will be reviewed during the preparation of this cycle of river basin management plans and further substances will be added if necessary.

What is being done?

- National monitoring programmes are in place to assess the levels of chemicals and heavy metals in our waters and substantial monitoring has been undertaken during the first cycle of the WFD.
- The Pesticide Registration and Control Division of the Department of Agriculture, Food and the Marine control the pesticides that are used in Ireland.
- The EPA with other stakeholders collaborated in a joint initiative with farmers to facilitate the removal of farm hazardous waste including pesticides. Over a two year period approximately 31 tonnes of pesticides were removed from farms for safe disposal.
- The EPA facilitated a National Pesticides Working Group to raise awareness and provide information to pesticide users on the potential impacts of pesticide use on drinking water quality. The group comprised experts from the HSE, National Federation of Group Water Schemes, CCMA/LGMA, Teagasc, Department of Agriculture's Pesticides Registration & Control Division, Federation of Agro-chemical Retail Merchants, Animal and Plant Health Association and the EPA. The Group devised an awareness-raising campaign which was launched in the summer of 2014[51]. The campaign will be repeated on a yearly basis as required.
- The Department of Agriculture, Food and Marine has developed a tool called STRIPE[52] to help drive good practice in the use of pesticides. Further information on pesticides in Ireland is available from the Pesticide Registration and Control Division at www.pcs.agriculture.gov.ie.
- Detailed studies and management plans for historic mines are currently being undertaken by the Department of Communications, Energy and Natural Resources.

[51] http://www.epa.ie/water/dw/sourceprotection/

[52] Surface water Tool for Reduction the Impact of Pesticides on the Environment

We would like you to consider:

Are you satisfied with the existing approaches taken to control and prevent chemicals in the environment? Are there any additional chemicals of concern that are currently not being considered in Ireland?

Issue 14: Climate Change

What is the issue?

Ireland's climate is changing and has the potential to impact significantly on the Irish water environment and its associated infrastructure. Changes in seasonal rainfall patterns are being observed including in the intensity of rainfall and its extremes both high and low. These effects are projected to increase and intensify in the coming decades. This will result in changes in annual and seasonal flow regimes, groundwater-surface water interactions and will affect water quality and biodiversity and the availability of water for abstraction. The traditional approach to water resource planning and management, in Ireland and elsewhere, is based on the assumption that the amount of water available is constant over time, within normal cycles of variability. The assumption is no longer valid. This means that we must look to new ways of planning and managing our waters in an era of climate change and extreme weather events, both floods and droughts, to ensure adequate water to protect aquatic species while ensuring resilience in our water services.

What is being done?

- The National Climate Change Adaptation Framework 2012 requires the development of sectorial adaptation plans by mid-2015 including a plan for how the water sector will adapt to the impacts of climate change. Local authority level plans are also expected to include climate change adaptation in their plan development and review.
- The newly published Climate Action and Carbon Development Bill (2015) will further strengthen the integration of climate change adaptation in the water sector by requiring the development of a water sector climate change adaptation strategy.

We would like you to consider:

How can we best plan to ensure the climate resilience of our water resources and aquatic ecosystems?

Issue 15: Invasive Alien Species

What is the issue?

While many Invasive Alien Species (IAS) have little or no negative impact, some can cause significant economic and ecological damage to wildlife and habitats and they are regarded as a serious cause of biodiversity loss and environmental change worldwide, particularly affecting freshwater ecosystems. Examples of IAS already established in our freshwaters are the zebra mussel, curly leaved water weed and more recently the Asian clam. Such species can, in certain circumstances, displace our native species, change the natural ecology and cause infrastructural damage like blocking of water intake pipes (zebra mussel). Some invasive plants live along riverbanks such as Himalayan balsam and Japanese Knotweed. They die back in winter and can cause bank instability and erosion leading to increased sedimentation. It is not clear, based on available knowledge, whether they are impacting on the ecological status of these waters as it is difficult to separate the impact caused by them from the impacts caused by nutrient enrichment. There is consensus across EU Member States that a separate biopollution index needs to be developed for IAS. Such an index would uncouple alien species and anthropogenic pressure assessments, and allow for a correct appraisal of the problem without affecting the WFD classification[53].

What is being done?

- The National Parks and Wildlife Service (NPWS) and the Northern Ireland Environment Agency established a joint venture called Invasive Species Ireland to co-ordinate activities on invasive alien species issues in Ireland.
- The National Biodiversity Data Centre has developed an online invasive species database and an early warning system. Members of the public can submit recordings of IAS.
- Inland Fisheries Ireland is particularly active in controlling IAS in our freshwaters.
- The EPA, via this research programme commissioned the project 'Alien Invasive Species in Irish Water Bodies[54]' with the aims of improving knowledge on IAS and their impact on natural environments. The project produced national distribution maps and trialled IAS control measures.
- An EU Life+ funded project by the NPWS and Inland Fisheries Ireland called "Control of Aquatic Invasive Species and Restoration of Natural Communities in Ireland'' (CAISIE) removed curly leaved water weed from over 90% of the infected area of Lough Corrib and brought the infestation to manageable levels.
- Lists of potentially high impact IAS have been compiled for the island of Ireland.
- The EU has introduced regulations on the prevention and management of the introduction and spread of invasive alien species (EU Reg. No 1143/2014).

[53] Alien species and the Water Framework Directive. JRC technical and scientific report (2010).

[54] http://invasives.biodiversityireland.ie/wordpress/wp-content/uploads/FInal-web-published-report_STRIVE_83_web.pdf

What can you do?

- Never release non-native species into the wild in Ireland.
- Be biosecurity aware and follow the guidelines available in the Water Users Code of Practice on the Invasive Species Ireland website[55].
- Report sightings on the Alien Watch section of the Invasive Species Ireland website[56] or on the National Biodiversity Centre website[57].
- Work with existing groups or set up your own groups to help eradicate alien species such as Himalayan balsam and Japanese knotweed from our riverbanks.

We would like you to consider

What actions do you think we need to take to manage alien species in Ireland?

Photo 5: Zebra Mussel Public notice

[55] http://invasivespeciesireland.com/cops/water-users/
[56] http://invasivespeciesireland.com/alien-watch/
[57] http://invasives.biodiversityireland.ie/submit-records/

Issue 16: Loss of High Status Waters

What is the issue?

High Status rivers, lakes and estuaries are indicators of largely undisturbed conditions. Such high status waters are important for supporting sensitive aquatic species such as the freshwater pearl mussel. The presence of high status waters in an area can contribute significantly to the re-colonisation of species to previously damaged waters and play an important part in conserving individual species and overall biodiversity. There has been an overall declining trend in high status rivers since monitoring began in 1987 from 30% of monitored waters down to 16% in 2009. There has been a welcome but modest improvement between 2010-2012; 18% of monitored waters are at high status which is still well below the levels found in the 1980s and further monitoring will be required to determine if this is a developing trend.

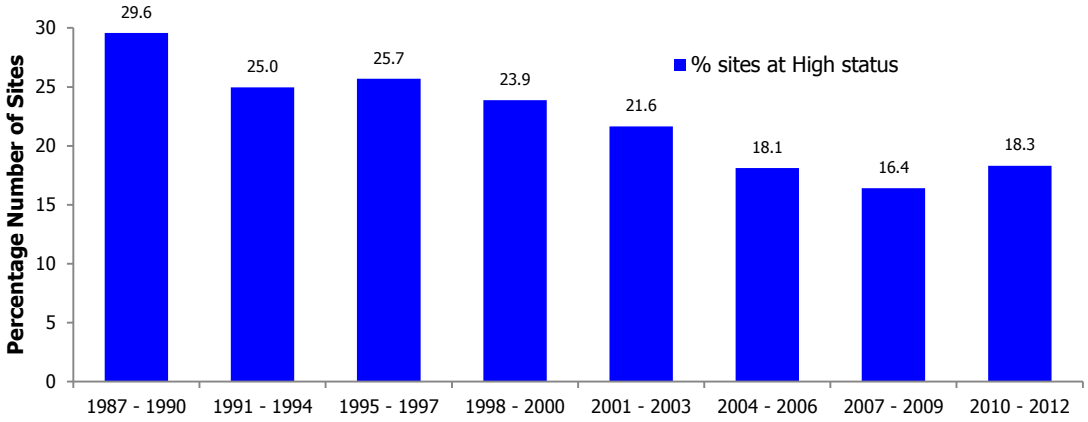

Figure 13: Long-term trends in the percentage number of high ecological quality (Macroinvertebrate) river sites (1987 – 2012).

What is being done?

- The EPA STRIVE research project (STRIVE No. 99) Management Strategies for the Protection of High Status Water Bodies (2012) proposed strategies to protect and manage high status waters that will be assessed during the development of the river basin management plans.
- The KerryLIFE project that commenced in July 2014 to promote sustainable land use practices in the Caragh and Kerry Blackwater areas for the conservation of the freshwater pearl mussel[58] which will assist with the protection of these high status water bodies.
- The Department of Agriculture, Food and the Marine is giving priority access to the GLAS agri environmental scheme to farmers in areas with high status waters.

We would like you to consider

How can we better protect High Status Waters?

[58] http://www.npws.ie/research-projects/kerrylife

Remember to Respond: We need your input

So just to recap, the Minister wants you to have your say. We would like you to consider the following:

- Do you agree that the issues facing Ireland's waters are correctly set out in this document?
- Are you aware of other issues that should be highlighted?
- What do you think are the most important issues to be addressed between now and 2021?
- How do you think the challenges identified should be tackled and what would you do first?
-

On each issue we are looking for your **feedback** on what we should do and how we can work together to achieve healthy, resilient, productive and valued water resources that support vibrant communities.

How to submit your view?

It is easy for you to let us know your views by:

1. Emailing your views to waterq@environ.ie ; and
2. Sending a written response to the Department of the Environment, Community and Local Government at "WFD SWMI consultation, Water Quality Section, Department of the Environment, Community and Local Government, Newtown Road, Wexford".

The final date for responses in respect of this initial consultation is 18 December 2015.

Appendix 1: Summary timetable and work programme for the production of the second cycle of River Basin Management Plans (RBMPs)

WFD Element	Purpose	Draft Dates and Periods
Publish draft timetable & work programme for 2015-2021 River Basin Management Plans (RBMPs), including statement of the consultation measures to be taken (this consultation).	Sets out the draft timetable & work programme to produce the 2nd cycle RBMPS. Highlights the mile stones in the RBMP cycle where consultation is required and the measures we will undertake to ensure involvement in the consultation process.	July 2014 (consultation to close 31 January 2015)
Publish interim overview of the Significant Water Management Issues (SWMI) in Ireland	Identifies significant water management issues to be addressed in the 2nd draft RBMPs and to facilitate public consultation	July 2015
Consultation Period following publication of SWMI for receipt of comments	Opportunity to comment on the significant water management issues. Consultation will be facilitated both through written consultation and online	July 2015 to December 2015
Publish revised Significant Water Management Issues overview and characterisation report required under(Article 5 of the Water Framework Directive	Provides technical details of the *characterisation of the river basin district, review of the environmental impact of human activity and economic analysis of water use* previously identified	December 2015
Publish Draft River Basin Management Plan for 2015-2021 & provide explanation for any extended deadlines and less stringent environmental objectives proposed	Sets out the objectives for the water environment and presents the strategy for meeting those objectives	December 2016
Consultation Period following publication of Draft RBMP for receipt of comments	Opportunity to comment on the draft plans including the objectives set and the measures proposed. Consultation will be facilitated both through written consultation and online	December 2016 to June 2017
Publish updated RBMP for 2015-2021	Sets out objectives for the water environment & the strategies for meeting those objectives between 2012 - 2021	by December 2017