Issue 1: October 2015

Online Edition: ISSN 2009-8928 Print Edition: ISSN 2009-891X

Catchments Newsletter

Integrated Catchment Management—sharing science and stories

Inside this issue

PHOTO: JOHN DOHENY

CONTENTS

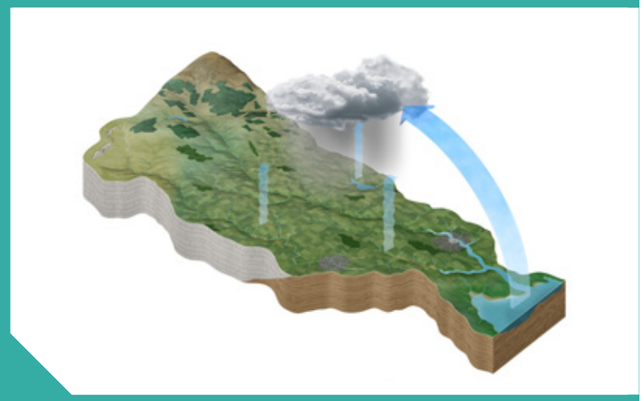
Inside this issue

Welcome to the very first edition of the Catchments Newsletter! While the EPA has taken the lead in coordinating this newsletter, we will rely on your continued contributions to make this a success. We welcome any comments, suggestions or articles that you would like included in future.

In future issues we would like to include case studies and examples of best practice from around the country and beyond on topics related to catchment science and management, so if you have any examples in your area please share them with us. Also we're very interested in your continued feedback so please let us know if there are any improvements that can be made for future issues. We hope to issue the Newsletter quarterly in 2016 so there will be plenty of opportunities for the Newsletter to evolve and become a valued resource for all of us involved in catchment management.

Thank you all – with your help this newsletter will be the first of many.

Paddy Morris, Marie Archbold and Donal Daly, EPA - Editors



EDITORIAL

Editorial

'May you live in interesting times' - Old Chinese Proverb

Welcome to the very first issue of the new Catchments Newsletter. It is certainly an interesting time to be involved in water management in Ireland: there is a new impetus to evaluate the water resources situation and to arrive at measures to protect or, where necessary, restore our water to at least good status; the EPA has been given additional responsibilities and resources; new governance arrangements are in place and a new WFD Office has been set up, which will be led by Kilkenny County Council and Tipperary County Council (see article by Matt Short and Carol McCarthy on page 4); FH2020 and Food Wise 2025 strategies present not only opportunities but also significant environmental challenges that must be met; and we now have a new body – Irish Water – who can help ensure an integrated approach to water supply and sewage treatment. In addition, integrated catchment management (ICM) has become the agreed approach to achieving the Water Framework Directive objectives and the sustainable use of our water and land resources in Ireland.

> *"Catchments: connecting land, water and people from the mountains to the sea" – EPA Catchment Science and Management Unit*

3D depiction of a catchment

The **Catchment** as the basis of water management is not a new concept. But ICM is new for Ireland. Why? A basic tenet of water management is what happens in one part of the catchment, as an integrated system, affects people and environments in other parts. Until recently, science, engineering and regulations were the basis for water management. This has not, however, been successful. The 'people' mentioned above were largely missing from the process; it is now generally accepted that without the involvement of catchment communities, we will not achieve our objectives. In evolving our catchment-based approach and philosophy to water management, we have drawn from experiences in countries such as Australia.

The ICM philosophy and approach, as adopted for Ireland:

i) is catchment based;

ii) involves awareness, engagement and consultation with local communities;

iii) requires a combination of 'bottom-up' and 'top-down' approaches;

iv) integrates all water types, all relevant disciplines, including social science;

v) includes emphasis on pollutant pathways, both surface and subsurface, that link pressures with receptors;

vi) considers ecosystem services, geosystem services and the value of water resources;

vii) uses a broad range of 'tools' in the toolkit', ranging in a continuum for local participation and partnership to enforcement;

viii) requires close collaboration between relevant public bodies; and

ix) presents a 'new' vision of a healthy, resilient, productive and valued water resource, that supports vibrant communities.

Achieving successful environmental outcomes will be difficult and it would be easy to be dismissive; however, by making ICM a common purpose, by giving it priority in allocating scarce resources, by overcoming or bypassing all obstacles, by collaborating in an open way, and by being determined to 'make it happen no matter what', the utilisation of our waters and associated lands can be undertaken in a sustainable and ethical manner.

See online article at:
http://bit.ly/gsigwicm

> *"The single biggest problem in communication is the illusion that it has taken place" – George Bernard Shaw*

How often have I realised the truth of that statement in my relationships with my children, partner and co-workers! Achieving success from ICM will require the willing input of a broad range of institutions, disciplines and people. Communication and sharing of ideas, knowledge and best practice will be critical.

There are varying ways of communicating successfully; a **Catchments Newsletter** is going to be one of them. In 1986, I initiated the **GSI Groundwater Newsletter** (now called the Irish Groundwater Newsletter (see article on page 16) and edited the first 45 issues. This **Catchments Newsletter** can be seen as a 'sister' newsletter, with the Groundwater Newsletter focussing on groundwater issues and the Catchments Newsletter dealing with other elements of catchment science and management, while maintaining a link with the Groundwater Newsletter. A major factor on the longevity of the Groundwater Newsletter was due in large part to the contribution of the wider community of those interested in groundwater – in public bodies, academia and the private sector. The same applies to this Newsletter; while the EPA is distributing this newsletter, it will be essential to get a diverse range of views and articles. So, you the reader are invited to submit articles to catchments@epa.ie; they can be as short as a paragraph, but should be no longer than 1,000 words. Let us use these Newsletters to increase our understanding of and support for catchment management.

> *"The noblest pleasure is the joy of understanding" - Leonardo da Vinci*

Donal Daly, EPA

Local Authorities - New Water Framework Directive (WFD) Office to assist with Implementation

New LA Shared Service office will have 3 Regional Coordinators, 3 Support Officers, and 12 Community Water Officers.

In July 2014, The Department of Environment, Community & Local Government issued the European Union (Water Policy) Regulations 2014, which gave effect to a new, three tier governance framework and placed new obligations on local authorities to co-ordinate the catchment management and public participation elements of the Water Framework Directive.

The Regulations also provide for the establishment of a Water Framework Directive Office to deliver on these obligations as a shared service on behalf of all Local Authorities. Kilkenny County Council and Tipperary County Council have been appointed as the lead Authorities for this project and will take responsibility for the WFD Office.

This shared service arrangement will take account of the need to deliver maximum benefit with limited resource availability. The WFD Office will ensure that the resources are utilised locally within an integrated national WFD implementation plan, based on a single River Basin District.

The strategic role of the Office will be:

- To promote knowledge sharing and coordination in implementing the River Basin Management Plans (RBMPs) and the Programme of Measures (PoMs) by local authorities, other public authorities, sectoral interests and community groups.
- To coordinate/undertake statutorily required public consultation in development of the RBMPs and POMs and a public awareness campaign in water resources management.
- To seek consistency of RBMP implementation across agencies.
- To assist the Minister and the EPA and work collaboratively with local authorities in the development of RBMPs and POMs.
- To mobilise and support engagement of voluntary and community groups in protecting our natural waters.
- To foster linkages with industry and agricultural sectors.
- To develop linkages with local sectoral representative organisations such as Chambers of Commerce, county level IFA, angling groups, tidy towns etc.

While the Office will be managed by Kilkenny County Council and Tipperary County Council, the greater portion of the staff will be placed throughout the country to ensure that resources can be harnessed and utilised locally.

The staff complement will be:

- **Three Regional Coordinators**, who will work with LAs in developing annual implementation plans and coordinating the implementation of those plans. They will also establish linkages with national and regional groupings, develop and manage a public participation programme and work collaboratively with other stakeholders and seek opportunities for joint actions.
- **Three Water Framework Directive Support Officers** who will provide key services that cannot be provided due to the technical expertise required. Specifically the needs identified are expertise in accessing funding and managing funding requests, data management including spatial analysis of information and the provision of regional and national level input to characterisation and plan development activities and expertise in marketing, communications, education and public relations.
- **Twelve Community Water Officers** whose primary role will be to engage with communities and individual sectors of society at local level. They will be geographically spread throughout the country and will be based within twelve Local Authority centres. They will engage with the public in water matters, seeking participation, education, local inclusion, two way communications, understanding, trust, and developing local area water management plans in partnership with stakeholders to meet WFD RBMP objectives.

The recruitment process has already begun for the Regional Coordinators and Support Officers, and it is anticipated that the other posts will be filled by the end of 2015. You can get in touch with the Local Authority Water and Communities Office by emailing info@lawco.ie

Matt Shortt, Tipperary County Council & Carol McCarthy, Kilkenny County Council

EPA Catchments Social Media

follow us on twitter

@ EPACatchments

slideshare
Present Yourself

Slideshare.net/EPAIreland

Catchment Case Study: The River Loobagh

The River Loobagh is a tributary of the River Maigue in County Limerick and has a catchment of approximately 129km^2. The Loobagh rises in the Ballyhoura Mountains and flows through the towns of Kilfinane and Kilmallock before joining the River Maigue south of Bruree. The Loobagh and its tributaries are important salmon spawning waters and also support healthy populations of trout.

Water quality in the Loobagh is generally good, particularly since the wastewater treatment plants serving Kilfinane and Kilmallock were upgraded in recent years. However, in August 2014, 70,000 gallons of slurry leaked from a steel slurry tower in to the Loobagh just up-stream of Kilmallock and killed hundreds of fish over several kilometres. While this event was deeply upsetting for the local community, particularly the anglers, a silver lining was that it focused attention on the river and highlighted its potential as a fishery.

As a result, the decision was taken to pilot a number of initiatives in this area with a view to developing a model of catchment management which would mobilise the local communities to become stewards of their aquatic resources and allow the river to achieve its potential as a high status water body and thriving fishery.

Aims of this pilot:

- To raise awareness of the multiple benefits that healthy waterways offer to all sectors of society and of the ways in which we can all impact water quality as we go about our daily lives;
- embed the idea that economic, social and environmental sustainability are inextricably linked, and
- empower communities to manage their rivers in a way that allows them to achieve the benefits they need while at the same time protecting water quality and biodiversity.

Educational and Awareness Programme

An education and awareness programme called "Streamscapes Loobagh", developed by Coomhola Salmon Trust, was delivered to all of the primary and secondary schools in the catchment and evening sessions were held in three locations for the wider community. The programme was received with huge enthusiasm and the feedback from all those who attended was extremely positive. This pilot was funded by Limerick City and County Council, however, it is hoped to encourage community groups to organise similar events in the future and to apply for funding under programmes such as Local Agenda 21.

Stakeholder Group

A stakeholder group has been established with representatives from community groups, farming organisations, the local development company, Coillte, Inland Fisheries Ireland, local councillors and landowners. A study trip was undertaken to the Ballinderry catchment in Northern Ireland to look at the work of The Rivers Trust there. The group felt that the Trust's model of community involvement in river planning and the co-operative approach to solving water quality issues would be very successful in the Loobagh area, but acknowledged that having full time dedicated staff was probably something that would not be possible in the immediate future. In the meantime however, it is hoped to establish a voluntary "implementation group" which would be a sub-committee of the stakeholder group and which would be positioned to apply for funding for relevant projects through programmes such as Rural Development Programme, Lottery Funding, Failte Ireland, Local Agenda 21 etc.

There are several other initiatives underway in the catchment including:

In-stream Works

The Local Anglers, with the assistance of Inland Fisheries Ireland, identified in-stream works which would improve the habitat for Salmon and Trout and restore fish numbers after the fish kill. They approached the councillors in the Municipal District of Killmallock-Cappamore who enthusiastically supported the proposals and allocated funds from the General Muncipal Allocation to fund phase 1 of the works.

These works included the construction of rubble mats, weirs, gravel beds, thalwegs and other structures to improve the conditions for fish to breed and thrive. The funding was used to purchase stone and gravel and the works were carried out by the OPW under their River Improvements Programme.

Riverfly Monitoring Programme

The Riverfly monitoring programme is a "citizen science" project which has been up and running in the UK for a number of years. It will be trialled in the Loobagh over the coming months. This project will provide training to interested community members, anglers and landowners in a simplified method of biological monitoring, which will allow people to monitor and assess their local rivers and streams. The first training session is scheduled for October this year and has been offered to members of the stakeholder group. If feedback from this group is positive, the programme will be offered to the wider community.

Control of Invasive Species

One of the issues highlighted by the group at an early stage was the problem of Giant Hogweed along the banks of the Loobagh. It was agreed that a high priority for the group should be to implement a programme to control this weed. Ballyhoura Development Ltd, the local development company has submitted an application for funding under Local Agenda 21, on behalf of the group, to provide training to participants in a local Rural Social Scheme in pesticide use and control of invasive species. If the application is successful, the training will be delivered in early 2016 and the control programme will commence at the start of the growing season. It is envisaged that eradication from the catchment will take between five and ten years.

Changing attitudes—engagement and empowerment

While the Loobagh project is in its early stages, already there is a perceptible shift in attitude: members of the stakeholder group and community groups in the area are already embracing the challenge and the traditional "why don't they do something about the problem" to has become "let's see what we can do about it"! This is the essence of meaningful community engagement and empowerment.

Anne Goggin, Limerick City and County Council

LIMERICK COUNTY COUNCILLOR BRIGID TEEFY EXAMINING A TROUT FRY

KILFINANE NATIONAL SCHOOL—KIDS FISHING INITIATIVE

LOCAL ANGLERS AND CHILDREN - RODS SPONSORED BY LIMERICK CITY AND COUNTY COUNCIL

Field Trip: Eden Demonstration Test Catchment, UK

Introduction

A two-day visit to England was made by Marie Archbold, Donal Daly, Jenny Deakin, Paddy Morris (all EPA) and Deirdre Fay (Department of Agriculture, Food and the Marine (DAFM)) on 29th – 30th April 2015. The purpose was to learn from the work of the Eden River Trust in Cumbria and the Eden Demonstration Test Catchment (DTC) research, and the research being undertaken by the Allerton Project, run by the Game & Wildlife Conservancy in the Eye Brook catchment, Loddington, Leicestershire.

Objective

The main objective was to derive comparisons between catchment research and characterisation being carried out in the UK and that being carried out in Ireland by Teagasc in the Agricultural Catchments Programme and by the EPA in their Catchment Science and Management Unit.

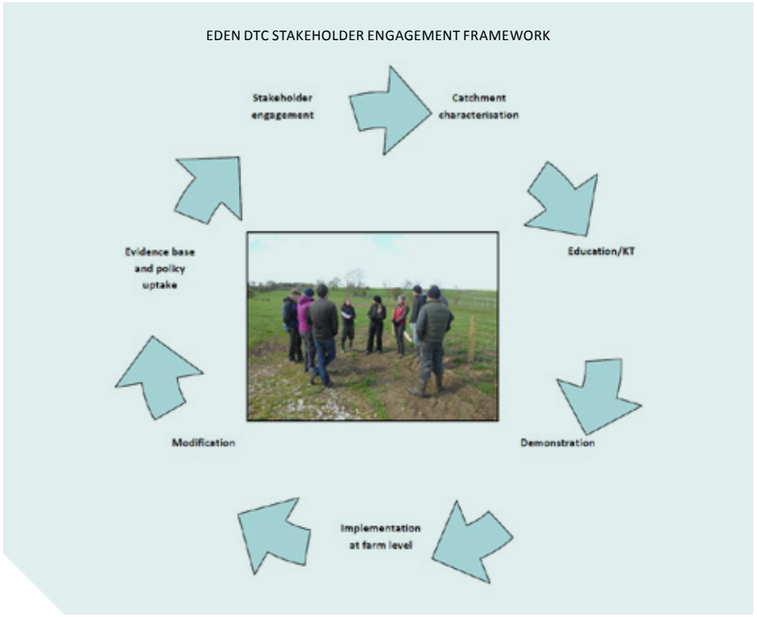
The purpose of this article is to reflect on the knowledge gained during the trip in the context of the DAFM funded Agricultural Catchments Programme, with a particular focus on the River Eden Demonstration Test Catchment (Eden DTC).

The Eden Demonstration Test Catchment (DTC)

The River Eden Demonstration Test Catchment (Eden DTC) is a Department of Environment, Food and Rural Affairs (DEFRA) funded research project. The aim of the project is to assess if it is possible to cost effectively mitigate diffuse pollution from agriculture whilst maintaining agricultural productivity. The project is working in three focus catchments within the River Eden catchment, selected to represent a range of land uses, physical characteristics and weather. The focus areas are in the Dacre, Morland and Pow catchments. Each catchment has an area of approximately 10 km^2. The projects involve monitoring the stream water quality and biology and looking at how the catchment responds to storm events. Working closely with farmers in the catchment to test a range of mitigation measures in real catchment situations is an important element of the project.

The project aims are three fold:

1. To produce evidence to test the hypothesis that it is possible to cost effectively reduce the impact of agricultural diffuse pollution to water on ecological function, while maintaining food security, through the implementation of multiple on farm measures.
2. To develop a research platform to host collaborative research.
3. To develop a common vision for catchment management centred around local knowledge and understanding.



The framework used by the Eden DTC includes multiple elements as depicted by the schematic diagram.

Each focus catchment was selected to represent the full range of natural and anthropogenic variation across the Eden catchment as summarised below:

Morland Catchment

- Limestone/sandstone/mudstone
- Sandy clay loam/clay loam
- Artificial drainage
- 87% grassland, 71% improved
- Dairy/beef/sheep
- 1150 mm rainfall

Pow Catchment

- Limestone/sandstone/mudstone
- Sandy clay loam/clay loam
- Artificial drainage
- 46% improved grassland, 37% arable
- Intensive dairy/beef/sheep/pigs/poultry
- 810 mm rainfall

Dacre catchment

- Upland
- Volcanic andesite, glacial till
- Sandy clay loam/clay loam
- 80% grassland, 16% woodland
- Extensive sheep grazing
- 1570 mm rainfall

Catchment pressures include intensive farming, erosion of river banks by livestock, flash flooding from hills and lowland drainage, abstraction, pollution and silting, and climate change and increasing frequency of floods and droughts.

A variety of changes in farm and land management are being trialled in the Eden DTC to reduce the impacts of diffuse pollution on surface water and groundwater.

These are being delivered through advice and support on soil and nutrient management, tailored to the specific geography and types of farm practice. Researchers and advisors are working with farmers to identify flow pathways, specific problems and 'hotspots' such as vulnerable fields and hard standings.

Catchment monitoring includes the collection and telemetry of water quality data such as phosphorus, nitrogen, ammonium, turbidity, pH, electrical conductivity, water temperature, chlorophyll a and dissolved oxygen, as well as hydro-meteorological data such as rainfall, river stage/flow and other meteorological parameters.

In addition non-telemetered data is collected such as monthly spot samples, storm samples, biological samples, borehole levels and chemical analyses of borehole samples, soil samples, faecal indicator organism samples, farm business and farmer attitude surveys.

Each focus catchment contains 2 sub-catchments, a control catchment and a mitigation catchment, each with an area of approximately 2 km^2.

For each mitigation sub-catchment a conceptual approach is adopted based on source, mobilisation, delivery and receptor.

Interventions being tested include:

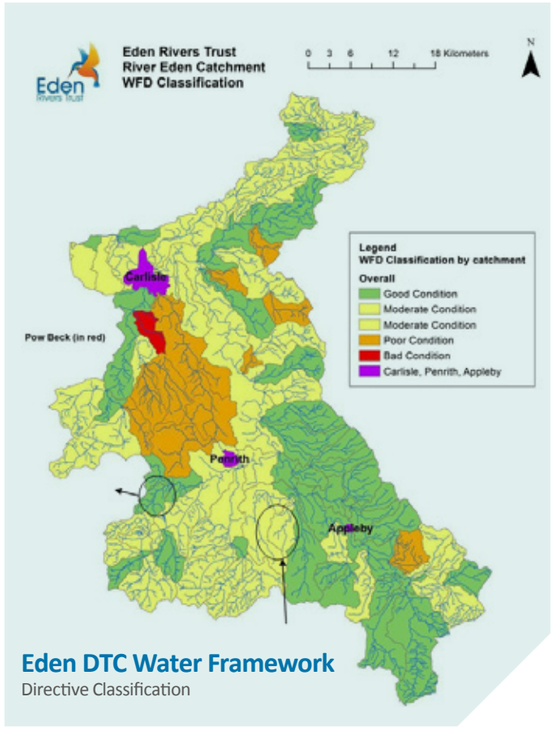
- Development of nutrient management plans targeting dirty water, slurry, manure and fertiliser spreading.
- Working with land managers to deliver large scale investment in farm infrastructure such as slurry and silage storage and manure management processes.
- Installing drains, ponds, lagoons and stone barriers where required.
- Improvement of livestock and machinery tracks to prevent erosion and rapid transfer of pollutants to watercourses.
- Establishing riparian buffer strips and stream-bank fencing to exclude livestock. Fencing may be coupled with some carefully targeted additional options such as constructed wetlands, and settling ponds for sediment and associated nutrient removal.
- Reduced cultivation methods such as strip tillage and the use of cover crops to reduce bare soil after harvest and to take up residual nitrogen.
- Biobeds to reduce pesticide pollution from sprayers. The sprayers are washed down on a hard standing and the polluted water broken down in a bed of straw, soil and peat.
- Initial research findings are showing positive effects in the mitigation sub-catchments, with a 28%, 39%, 27%, and 31% decrease in total phosphorus, total reactive phosphate, nitrate nitrogen and ammonium nitrogen respectively, as well as a 35% increase in suspended solids.

Concluding remarks

A particular success of the Eden DTC of working is the close working relationship with farmers to test a range of mitigation measures in real catchment situations. This approach is an invaluable element of the project, and fosters a meaningful exchange of knowledge between researchers, advisors, farmers and policy makers. It is recommended that a similar research based mitigation approach is considered alongside the existing research based monitoring programme, in any subsequent funding of the Agricultural Catchments Programme to ensure a simultaneous focus on maximising the uptake of best management practices by farmers, as well as the development of national sustainable intensification policies.

Deirdre Fay, Department of Agriculture, Forestry and the Marine

OVERLAND FLOW INTERCEPTION VIA IN-FIELD DETENTION POND AT A TENANT FARM IN LOWTHER ESTATE, MORLAND CATCHMENT



Eden DTC Water Framework
Directive Classification

New UNESCO Biosphere for Dublin Bay

On June 24th 2015, the designation of Dublin Bay Biosphere was announced. Biospheres are internationally recognised for their biological diversity yet also actively manage to promote a balanced relationship between people and nature.

BITHSFÉIR
Chuan Bhaile Átha Cliath
Dublin Bay
BIOSPHERE

The designation is awarded by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) but managed in partnership by communities, NGOs and local and national governments. There is a global network of 651 Biospheres in 120 countries.

In 1981, UNESCO designated North Bull Island as a Biosphere because of its rare and internationally important habitats and species of wildlife. There have subsequently been additional international and national designations, covering much of Dublin Bay, to ensure the protection of its water quality and biodiversity. To support sustainable development, UNESCO's concept of a Biosphere has evolved to include not just areas of ecological value but also the areas around them and the communities that live and work within them. To fulfil these broader management aims for the ecosystem, the Biosphere has now been expanded to cover Dublin Bay, reflecting its significant environmental, economic, cultural and tourism importance, and extends to over 300 km^2. Over 300,000 people live within this area.

All Biospheres have three main goals:

1. Conservation: promoting the conservation of landscapes, habitats, wildlife and cultural values
2. Learning: supporting education and research, for a better understanding of nature and global issues
3. Development: fostering a sustainable economy and society for people living and working in the area

Dublin Bay Biosphere contains three different management zones. The core zone comprises protected areas which are managed for the conservation of landscapes and biodiversity. It includes Baldoyle Bay, Ireland's Eye, Howth Head, North Bull Island, the Tolka Estuary and Dalkey Island and covers 50 km^2. The surrounding or adjoining buffer zone is managed to support the core zone and research, monitoring, training, education and other environmentally sustainable activities are encouraged here. It comprises 82 km^2 of public and private green spaces such as parks, greenbelts and golf courses. The transition zone is the outer zone, where sustainable social and economic development is strongly promoted. It covers 173 km^2 and includes residential communities, harbours, ports and industrial and commercial areas. Dublin Bay is subject to an existing comprehensive legislative and policy planning framework implemented by all levels of government. The Biosphere designation brings no new regulations; its aims are achieved by people working together. The Biosphere is managed by the Dublin Bay Biosphere Partnership, which includes Dublin City Council, Dublin Port Company, Dún Laoghaire-Rathdown County Council, Fingal County Council and the National Parks & Wildlife Service of the Department of Arts, Heritage and the Gaeltacht. This partnership works with community groups, NGOs, local businesses and schools. A Conservation Programme, a Business Development Plan for sustainable tourism and recreation and a Research and Education Strategy, including a programme of events, will be developed for Dublin Bay Biosphere.

"Working together to provide a balance between people and nature"

DUBLIN BAY BIOSPHERE ZONING MAP

For further information, please visit our website www.dublinbaybiosphere.ie or follow us on Facebook or Twitter.

www.facebook.com/dublinbaybiosphere
www.twitter.com/dublinbiosphere

Jenni Roche, Dublin Bay Biosphere

DUN LAOGHAIRE AND DUBLIN BAY (PHOTO: PETER BARROW)

Crayfish plague confirmed in Lough Gowna Catchment, Cavan

WHITE CLAWED CRAYFISH

Crayfish background

For those who aren't already aware of their existence, crayfish are native to Irish lakes, rivers, streams and canals. They are the only member of the lobster family living in our freshwaters. They grow to approximately 10-15cms in length and have large sharp claws for defence and feeding. They require water with high calcium concentrations in order to maintain and grow their hard shells, so are typically found in limestone regions. Ireland has only one species, the White Clawed Crayfish (Austropotamobius pallipes) and large populations can be found in many areas. They are mainly nocturnal and seek refuge under stones, logs and vegetation where they enjoy a varied diet of insects and plants. They are known to be cannibalistic, particularly the larger adults. They can survive for up to ten years and are important prey items for otters, fish and birds on our waterways.

Historically found across most of Europe, White Clawed crayfish populations have seen massive declines in the last hundred years – to the point where they are now extinct in many parts of Europe. This global decline can be attributed to many issues – habitat destruction, pollution, overfishing – but primarily to competition from non-native species, particularly the North American Signal Crayfish (Pacifastacus leniusculus). The Signal Crayfish was introduced across Europe for aquaculture (it is much bigger then the native species) but escapes, and its use by fishermen as bait has led to its rapid establishment across most of the white-clawed range. Being bigger and more aggressive, the Signal Crayfish outcompetes the native species for habitat and food (much like the grey squirrel outcompetes the native red squirrel) restricting it to isolated areas and resulting in large population declines. Most worrying of all, the Signal crayfish is a carrier of the crayfish plague, which it is immune to – but the native species has no immunity at all. The plague is a fungal infection (Aphanomyces astaci) which spreads rapidly and leads to total wipeout of infected individuals within two weeks of exposure. While the Signal crayfish is the original source of the infection, the fungal spores can then be carried by other animals (otters/mink/migrating birds etc) into new watercourses. The transfer of boats between river/lakes and the movement of watersport enthusiasts and fishermen are thought to transmit the fungus. Once the actual fungus is introduced into a waterway, it spreads quickly and without assistance. The natural movement of the water will transport the spores downstream and infected crayfish will move the disease upstream. Terrestrial animals, bathing, fishing and boating activities will also accelerate the diffusion of the plague driving our native crayfish to the brink of extinction. The disease is rapid and fatal, with few clinical symptoms. Often the only evidence of its presence is the appearance of hundreds or thousands of dead and dying crayfish on the lake shore or river bank. Infected specimens may exhibit unusual behaviour a few days before death, such as appearing during daylight hours, wandering out of the water and walking strangely due to paralysis. White tufts of fungus may or may not be visible on the body.

White Clawed Crayfish in Ireland

Only the native white clawed crayfish has been recorded in Ireland to date and as such we are unique in Europe in having no alien crayfish species present – yet. As a result, Ireland has the largest and most important remaining populations of white clawed crayfish in Europe, where it is listed as Endangered in the IUCN Red List of Endangered species. It is also listed under Annex II of the EU Habitats Directive. Despite the absence of its competitor, the Signal Crayfish, crayfish plague has been confirmed in Ireland on several occasions since the 1980's with some areas losing all their crayfish stocks (Lough Lene, Lough Bane, Lough Sheelin, Lough White (crayfish since reintroduced by NPWS), Lough Owel, parts of the Inny catchment, parts of the Boyne Catchment etc). The fungal spores are suspected to have come from infected nets, gear, boats or migrant birds. The latest confirmed outbreak in Co Cavan (on a tributary of the River Erne) has led to fears of the plague spreading rapidly and wiping out our remaining stocks of this protected native species.

What can we do?

As responsible water-users, the most important thing we can do is limit the spread of the fungal spores. Crayfish plague spores can be spread on damp equipment such as fishing tackle, boots, canoes and machinery. Do not move any equipment that has been in contact with river or lake water without either disinfecting (iodine based disinfectant) or washing (clean tap water) and then drying completely. If you see any Signal Crayfish (see photo below) or anyone in possession of, or attempting to trap, release or sell live crayfish, please report to NPWS or IFI. Similarly, if you notice any numbers of dead/dying native crayfish please also report it.

Crayfish Plague (tips from BugLife UK)

Follow these simple tips and you can help to stop the spread of crayfish plague...

Definitely: - Dry all wet and muddy equipment used in rivers and lakes for several days

Try to: - Thoroughly washing all wet and muddy gear and then dry for several days

Or: - Disinfect with a suitable disinfectant (e.g. domestic bleach, an iodine-based disinfectant, FAM30, Virkon or others). Clean off any mud before using a disinfectant and make sure you dispose of the left over disinfectant carefully so it doesn't cause any pollution to waters. Anglers try to avoid fishing different rivers or other water bodies on the same day, but if you do then disinfect all wet gear between sites. It helps prevent the spread of diseases and parasites of fish too. If there is an outbreak of crayfish plague in a river, avoid going into the water if at all if possible. When there are dead and dying White-claws the risk of spreading crayfish plague is hugely increased.

Patricia McCreesh, EPA

SIGNAL CRAYFISH (NOTE RED CLAWS)

NEWS & ARTICLES

Significant Water Management Issues in Ireland

Water is essential for life. Humans need it for drinking and food preparation. It is 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. Many of our waters are still healthy and the first challenge is to maintain the good water quality that we have. Unfortunately, there are also many cases of polluted waters and contaminated drinking waters. The challenge for Ireland is to restore such areas to their natural healthy state.

While the Minister for the Environment, Community and Local Government has a lead role under the EU Water Framework Directive, tackling these challenges requires collective action. River Basin Management Plans (Plans) are used in all EU Member States to address these challenges in an integrated and holistic manner. The Plans look at the pressures on our water resources that are causing problems and set out actions to address them. Ireland is now preparing its second round of Plans which will be in place in 2017 and it is important to know what the critical pressures are for each water sector and what actions can be best delivered in the final Plans in order to address those pressures and the problems they give rise to.

While the making of these Plans requires a considerable amount of technical expertise, it also requires the knowledge, understanding and views of people who use water in their everyday lives. Therefore, whether you drink it, fish in it, feed cattle with it, swim in it, use it for business or just admire it as an environmental resource we want to hear from you.

Public Consultation

The Minister for the Environment, Community and Local Government, Alan Kelly T.D., has launched the second phase of public consultation on the second cycle of River Basin Management Planning in Ireland. The Minister wants to ensure that the most important issues are identified and addressed during the preparation of the Plans. In this context, the Minister is now seeking views on what are considered to be the significant water management issues for Ireland. This article briefly summarises the issues contained in the Consultation Document. The full text of the document is available on the Department's website at http://bit.ly/IRLSWMI

Key Questions: The key questions that you are being asked your views on are:

- Do you agree that the issues facing Ireland's waters are the ones set out in this document?
- Are you aware of other issues to be addressed?
- 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:

- Emailing waterq@environ.ie
- Sending a written response to "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 is **18 December 2015**.

Current Condition of our Waters

Irish water quality is good in comparison with other European countries but, as can be seen from the table below, 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.

The data for 2010-2012 show that 47% of rivers, 57% of lakes, 55% of estuaries and 7% of coastal waters (by area) are in less than good condition. While just 1% of groundwater bodies are at poor chemical status there are still significant issues with bacterial contamination of groundwater.

Pollution resulting from elevated nutrient concentrations continues to be the most widespread water quality problem in Ireland.

The Issues: Pressures on our Water Environment

Urban Waste Water Discharges: Inadequate collection and treatment of urban wastewater discharges places a significant pressure on the natural water environment. The urban waste water sector is a key potential source of nutrients (phosphorus and nitrogen) and pathogens (disease causing organisms). Municipal discharges were the suspected cause of pollution at 34% of 840 impacted river sites assessed between 2010 and 2012.

Agriculture: Agriculture accounts for 68% of land use in Ireland. The most significant impacts from agriculture are the release of nutrients (phosphorus and nitrogen) and pathogens into waters. Agriculture can also give rise to sediments entering waters due to damage to river banks and lake shores. Agriculture is believed to be the cause of pollution in 53% of impacted river sites assessed between 2010 and 2012. Achieving the objectives of the Water Framework Directive in the context of increasing agricultural output under Food Harvest 2020 and Food Wise 2025 will be a major challenge. Agricultural activities are also the source of certain microbes causing human illnesses including those caused by cryptosporidium and e-coli bacteria.

Forestry: Ireland currently has 10.7% forest cover 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 water bodies. Forestry pollution sources account for 4% and 3% respectively of the suspected cases of slight and moderate pollution in river monitoring sites based on monitoring between 2010 and 2012.

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 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 is of high importance.

Industrial discharges: Significant industrial discharges are licenced by the EPA and local authorities. Data from monitoring between 2010 and 2012 indicates that industrial pollution is causing an issue at 5% of impacted river monitoring stations.

Activities spreading alien invasive species: Alien invasive species can cause impacts in the water environment, including destabilisation of river banks. They compete with local species and can displace them, thereby damaging natural aquatic ecosystems. 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. The movement of boats and their trailers, and of fishing gear from one water body to another, increases the risk of the spread of these species.

Managing our Water Resource

By the end of 2015 a national Local Authority Water Framework Office will be in place. This Office will have 3 regional co-ordinators, 3 regional support officers and 12 community water officers. The role of this office is to promote community engagement, awareness and actions to enhance water quality at local level. It will work with local groups and industry to raise awareness of water quality issues in an area. The office will also assist the EPA in the monitoring of the implementation of River Basin Management Plans and the Minister for the Environment, Community and Local Government in the development of the Plans and policy in relation to water quality.

The Challenges

The challenges outlined in detail in the main consultation document can be summarised as follows:

Societal Factors

- 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

Environmental Factors

- 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

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. For more information please see the full consultation document available on the Department's website at bit.ly/IRLSWMI

Statue of Irish water (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

SUMMARY OF WFD STATUS 2010-2012

NEWS & ARTICLES

A beginners guide to Integrated Catchment Management and the EPA's role

Water is a precious resource, and is essential for all life on earth. Managing our water so it can meet our current and future needs and also continue to support the ecosystems that depend on it is vital for Ireland's future.

Effective management of water requires us to look at the pressures on our water resources at an appropriate scale - large enough that we can take account of all the relevant information, but small enough to ensure that people who live in the area can easily relate to their catchment. Experience around the world and in Ireland has shown that an integrated approach to managing individual catchments of an appropriate scale is necessary to protect and improve water resources. A catchment is simply defined as an area contributing water to a river and its tributaries, with all the water ultimately running off to a single outlet. Managing our catchments requires us to understand and integrate a huge range of information - how people are using the water, including drinking, agriculture, industrial use and bathing; the geography and geology of an area, looking at how all the water bodies are connected both above and below ground, how the water flows from where it falls as rain to the sea; how people use the land and water bodies and what livelihoods are supported; and possible sources of pollution, including urban waste water treatment plants, septic tanks, and runoff from farming, forestry and landfills.

Integrated catchment management—what does it involve?

1. Gathering the best available information to understand the catchment - where the water comes from, how it flows through the landscape both overground and underground, and what activities in the catchment may be causing pollution.
2. Looking at all the uses of water - drinking, agricultural, industrial and recreational, and also the vital ecosystems that depend on water to survive.
3. Engaging local communities and involving them in decision making and management of their catchment.
4. Adopting appropriate measures to ensure that activities that represent a significant threat to water resources are effectively managed.
5. Applying the scientific and local knowledge of how the catchment operates to protect and improve water, providing a healthy, resilient, productive and valued resource that supports vibrant communities.

The Water Framework Directive (WFD) Explained

This piece of EU legislation has become a major driver for achieving sustainable management of water in Ireland and across the EU. Under this directive, all inland and coastal waters must at least reach 'Good' ecological status. 'Good ecological status' means achieving satisfactory quality water, maintaining ecosystems that can support all the species of plants, birds, fish and animals that live in these aquatic habitats.

A key part of the Water Framework Directive is Article 14, which requires all member states to genuinely engage with the people who live, work and play in a catchment. To do this, it is important to understand how local communities live in their catchments and use their water. Therefore, it is critical that local communities are involved in management and decision making related to protecting and, where necessary, improving their water resources.

Ultimately, meeting the sometimes narrow objectives of the WFD is not the aim - helping communities protect and improve a beautiful and diverse landscape with accessible healthy waterways that are productively used to support livelihoods, habitats and rich wildlife is the goal. However, the WFD is a powerful tool to help in achieving this goal.

Working Together - The EPA's role in Integrated Catchment Management

The EPA's Catchment Science and Management Unit will work together with local authorities, other public authorities, government agencies, and local communities in establishing effective integrated catchment management in Ireland. The main purpose of the Unit is to protect and improve water resources, while ensuring that any water body remains productive for the communities that depend on it. A key focus of our work will be integrating existing knowledge from a range of disciplines - including hydrology, hydrogeology, ecology and hydrochemistry - with data on the pressures that are impacting on water bodies in our catchments from sources such as urban waste water treatment, septic tanks, farming, forestry and landfills. Integration of this data will provide us with an understanding of how pressures and geology are linked, enabling us to develop effective plans and measures to improve water resources that are both economically and environmentally sound. To do this, we will be undertaking WFD Characterisation, delivering a template River Basin Management Plan, and engaging with stakeholders.

The Characterisation Approach and River Basin Management Plans

Nationally, we are required to deliver the 2nd Cycle River Basin Management Plan in 2017. To do this, we must first characterise our water bodies. This allows us to then to develop mitigation measures targeted at restoring and protecting our water bodies that are at risk of not reaching good status. There are three steps in the characterisation process:

1. **Preliminary Risk Screening:** a risk assessment of the status of water bodies, trends and the distance to thresholds based on monitoring data. This screening identifies water bodies 'At Risk' of not achieving good WFD status.
2. **Initial Characterisation:** allows the 'At Risk' water bodies to be further investigated at a subcatchment scale (100-250 km2) and catchment scale. At this stage EPA will work with local authorities to determine which pollution sources have the greatest impact on water bodies by identifying likely significant pressures such as point sources and critical source areas for diffuse pollution.
3. **Further Characterisation:** is targeted at the significant pressures, such as critical source areas for example, and involves undertaking investigative assessment such as catchment walks and monitoring to get an understanding of how these sources of pollution can be reduced or managed more effectively. The characterisation process informs the selection of the programme of measures. The involvement and cooperation of local communities, local authorities, and government/public bodies will be essential to ensure that the measures implemented are successful in improving our water resources.

Paddy Morris, EPA Catchments Unit

Hydromorphology : What is it?

Hydromorphology considers the physical character and water content of water bodies. Good hydromorphological conditions support aquatic ecosystems (i.e. hydromorphological elements such as water flow and substrate provide physical habitat for biota such as fish, invertebrates and aquatic macrophytes).

While hydromorphological impacts are not as severe compared to other European countries, it is an area that requires more attention in Ireland.

EXAMPLES OF HYDROMORPHOLOGICAL PRESSURES IN IRELAND: CHANNELISATION

As the second cycle of the Water Framework Directive approaches, an assessment is needed to identify hydromorphological pressures impacting Irish water bodies. Pressures can include abstraction, impoundment (i.e. dams and weirs), channelisation and embankments. My main role in the EPA Catchment Science and Management Unit is to help develop a hydromorphological risk assessment approach for rivers, lakes, transitional and coastal water bodies.

The EPA approach to hydromorphological risk assessment

The risk assessment is a three stage approach with each stage screening water bodies in order to prioritise further investigation at the final stage.

1. Preliminary Risk Screening: this will incorporate information on water bodies with known hydromorphological issues based on expert opinion, along with evaluating national monitoring data in order to identify any indications of other pressures other than eutrophication. This will help identify water quality issues that need to be addressed first; it is vital to tackle water quality pressures prior to implementing hydromorphological measures. These water bodies, along with water bodies with known impacts caused by hydromorphological pressures, will be given high priority for the next stage.
2. Initial Hydromorphological Characterisation: this will involve a GIS based desktop assessment to identify the screened water bodies that may be impacted by various hydromorphological pressures.
3. Further hydromorphological characterisation: this can include actions such as field assessments to finally assign a risk category to the water body. This will allow the identification of appropriate mitigation and rehabilitation measures. Screening water bodies throughout the process will allow for a streamlined focus approach.

In recent years, a lot of hydromorphological work has been carried out in Ireland. The OPW and IFI's Environmental River Enhancement Programme (EREP) is a good example of this work. Existing hydromorphological information, such as EREP, needs to be built into the risk assessment. In addition, the approach will lead the way to building a comprehensive, standardised national hydromorphological dataset for future work. Worldwide, there is still a poor understanding of the quantitative links between hydromorphological degradation and ecological response. As eco-hydromorphology is constantly evolving, the approach will be reviewed as the science develops further.

Emma Quinlan, EPA Catchments Unit

EXAMPLES OF HYDROMORPHOLOGICAL PRESSURES IN IRELAND: BARRIERS TO CONNECTIVITY

NEWS & ARTICLES

Catchment Management Network Update

The Catchment Management Network was launched in November 2014, and has members from Local Authorities, public bodies and others interested in Integrated Catchment Management (ICM).

Over the past year Network activity has largely focused on:

- Facilitating communication, discussion and joint working arrangements for WFD Characterisation and implementation.
- Ensuring that a consistent technical approach for Characterisation and Implementation is adopted nationally.
- Hosting and managing the National Implementation Group and relevant working subgroups.
- Facilitating knowledge transfer between the EPA, local authorities, public bodies, and other interested parties on areas related to ICM and the WFD.

Next Meeting:

The next meeting of this network is on November 26th in Tullamore - you can book your ticket online now at https://www.eventbrite.ie/e/catchment-management-network-2015-tickets-18500135403

Progress to date:

- The National Implementation Group has been established, along with working groups on Agricultural Measures, Planning, Characterisation, Monitoring and Hydromorphology with representative from local authorities, public bodies and other interested parties involved. Phase 1 of the WFD Application has been developed, the Characterisation Approach document has been released and there has been consultation with Local Authorities on the newly delineated subcatchment layers.
- The Integrated Catchment Management 6-day Course has been run three times and attended by over 80 Network members. One more course will be run in November and this course is over-subscribed. If you have not registered for the November course but are interested in attending a course in the future please email catchments@epa.ie. If there is sufficient demand additional courses may be organised.
- This Catchments Newsletter has been established to disseminate local, regional, national and international updates and developments in relation to Integrated Catchment Management. We would really like to include case studies from around Ireland, so if you have a story you think should be included, please get in touch. The Newsletter will be issued quarterly and contributions from anyone involved in ICM are welcome and eagerly anticipated. Please email any articles, updates, announcement and details on upcoming events to catchments@epa.ie

The Future:

The next year is going to be an extremely busy time for the Network and in conjunction with the new LA Shared Service WFD Office we will be working on the following:

- The EPA Catchment Science and Management Unit will be visiting each local authority for 1-2 days to go through and discuss the initial characterisation results and to work together to determine the subcatchments that require further characterisation and investigative assessment. This process will begin at the end of October and a schedule and timeline will be agreed with each local authority over the coming months. This process will feed into developing a report for each subcatchment which in turns feeds into a catchment report where appropriate measures can be considered. These catchment reports will ultimately be summarised into the River Basin Management Plan once the programme of measures is completed. The preparation of these reports will be the main focus of the Network.
- Developing tools and websites for dissemination of information including further development of the WFD App.
- Continuing to host and facilitate the National Implementation Group and associated working groups and establishing working groups on measures, public participation, and information and data exchange.

We would like to thank you for you involvement, support and enthusiasm in the Network to date and look forward to working together with you all in the near future.

How to join the Network – Shared Online Workspace

The EPA is hosting a shared workspace with announcements, an event calendar, a document library and discussion board online. Most public bodies' will be able to register to access this space. The Network page is hosted on the Network for Ireland's Environmental Compliance and Enforcement (NIECE) which is part of the Environmental Data Exchange Network (EDEN) Ireland. You can find it here:

https://www.niece.ie/workgroups/WFD%20Catchment%20Management%20Group/SitePages/Home.aspx

Marie Archbold, EPA Catchments Unit

GUY PLUCKWELL, UK ENVIRONMENT AGENCY PRESENTING ON THE LOVE YOUR RIVER TELFORD PROJECT

WFD Application - Phase 1 is now live on EDEN

The EPA is developing a Water Framework Directive Application to support key stakeholders involved in WFD characterisation and implementation of the River Basin Management Plans.

A long-term view is being taken in developing a phased roadmap for delivery, with the first release live since May 2015.

The first phase of work has been progressed primarily to support the Water Framework Directive risk characterisation and implementation process but the application also provides access to a range of water quality information for all waterbody types (rivers, lakes, groundwater, transitional and coastal waters) that will be of interest to all involved in catchment management and, in particular, water quality.

Where is the application available?

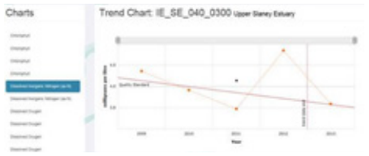
The application is hosted on the EDEN Portal, which provides an online gateway to Environmental and Radiological Protection Licensing, Monitoring, GIS and Reporting applications for organisations, in particular local authorities and public bodies, to communicate with the EPA and share data with each other. The WFD App is easy to navigate but users should be aware of the scientific approach taken in interpreting the data presented. Documentation explaining the scientific approach will be available to any EDEN users who request access. The App can be found at https://wfd.edenireland.ie/.

Overview of Key Functionality

- **National View** - a national view of recent status is available, with navigation and search tools to enable exploration to the waterbody level. New versions of the river waterbodies and groundwater bodies created for 2nd Cycle River Basin Management Plans are available within the application. The waterbodies have been revised to improve the accuracy of the WFD status classification.

- **Waterbody Details** - a breakdown of status elements for each waterbody (not including the influence of protected areas) is available for exploration.

- **Parameter Trends** - charts of data and trends for a range of water quality parameters for each waterbody have been incorporated.



- **Preliminary Risk Screening** - draft nutrient risk screening outcomes have been calculated based on the water quality information as per the three tiered characterisation approach being adopted by the EPA. Each risk outcome will be checked and approved in the coming months and progress will be tracked using the application.

What's next?

Over the next few months, the scientific teams will be checking and approving the preliminary risk outcomes assigned to all waterbodies in collaboration with Local Authorities and other public bodies involved in water management.

In tandem, the next phase of development is in progress, which will develop a platform for undertaking reporting at a subcatchment and catchment scale, to complement the current waterbody scale available. These reports will inform the development of the 2nd Cycle Programme of Measures. Work is currently ongoing to develop a website to disseminate WFD related information publically.

Read More:

WFD Application Phase 1 Technical Overview

http://www.epa.ie/pubs/reports/water/other/wfdapplicationphase1technicaloverview.html

An approach to characterisation as part of implementation of the Water Framework Directive http://www.epa.ie/pubs/reports/water/other/wfdcharacterisationapproachmay2015.html

Martina Hennessy and Jenny Deakin, EPA

Water Quality in Ireland 2010-2012

The purpose of this EPA report is to give a detailed review of all the main issues related to the quality of the aquatic environment in Ireland, in order to provide guidance towards the protection and enhancement of this valuable resource, and the preparation of second cycle river basin management plans under the Water Framework Directive.

bit.ly/wq20102012

GSI Groundwater Mobile Web Application

The Groundwater Programme in the Geological Survey of Ireland (GSI) has developed an application to enable mobile access to the already frequently accessed GSI groundwater maps (wells, karst features, resources, protection etc). This will make the data more accessible – both to a wider spectrum of end-users and in a more time-critical manner e.g. on-site access.

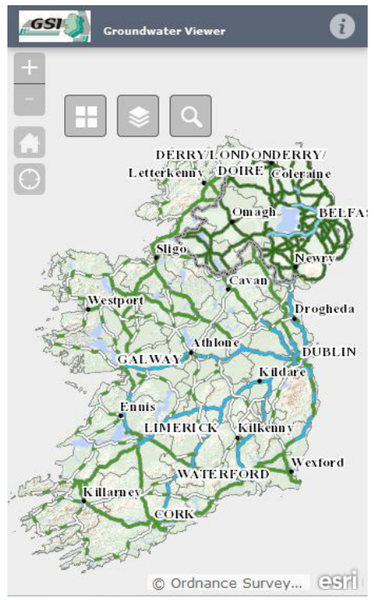
The Groundwater Mobile Web App, which was developed specifically for the Groundwater 3-D Mapping Programme, includes:

- Choice of OSI base maps
- Geolocator
- Switch on/off various GSI Groundwater layers
- Layer identify functionality
- Display PDF reports for certain layers

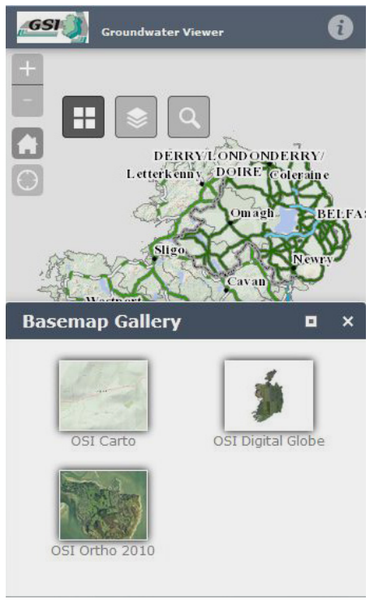
This is an extremely useful tool for field geologists, environmental managers, engineers, local authorities and agricultural consultants to name a few.

Since launched in late April of 2015, the application has been used at least 550 times.

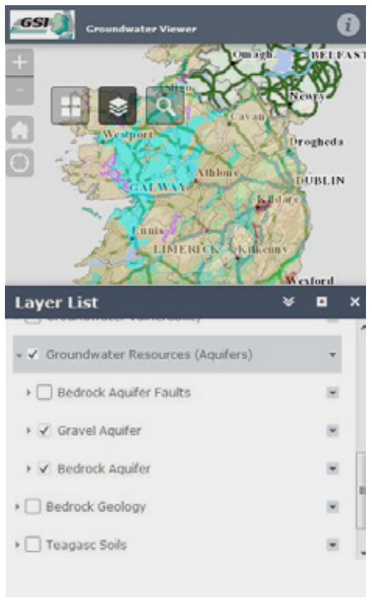
The application can be accessed through the following link: http://j.mp/gsigroundwater



THE MOBILE APPLICATION



BASEMAP OPTIONS



GROUNDWATER LAYERS

GSI Groundwater Newsletter

The GSI Groundwater Newsletter deals with issues concerning groundwater protection and management in Ireland. Among items discussed are:

- Exploration
- Management
- Pollution
- News from abroad
- Development
- Quality
- Reviews
- Opinion forum

bit.ly/gsigwnews

Website: CatchmentBasedApproach.org

Information and examples of best practice from the UK

The Catchment Based Approach (CaBA) website highlights the approach being taken in the UK, where over 1500 organisations are now involved in various forms of catchment partnerships. The site includes information, and some great case studies. The website is very easy to navigate and visually engaging, and would potentially be a good template for any similar websites in Ireland.

All the information on the website is under a Creative Commons license so you can use it for your own purposes online or in publications as long as you attribute and state the source.

catchmentbasedapproach.org/

WorldOfWater.ie

Source Protection: Resources for Educators

This website was developed by the National Centre for Freshwater Studies at Dundalk Institute of Technology, in collaboration with the National Federation of Group Water Schemes, the Department of the Environment, and Monaghan County Council.
The aim of this initiative is to educate, and promote a positive attitude towards our freshwater environments. Educational Resources are included for all ages.

worldofwater.ie/

INTERREG Call: Environment – Improving Water Quality in Shared Transitional Waters

The INTERREG VA Programme is making a call for applications under the specific objective: Improving water quality in transitional waters.

The total value of call is €30 million in European Regional Development Funds.

Opening Date: 5 August 2015
Closing Date: 30 October 2015 (15:00)

bit.ly/intertrans

Book Review: "Catchment and River Basin Planning: Integrating Science and Governance"

Edited by L Smith, K Porter, K Hiscock, M J Porter and D Benson; published by Routledge in their Earthscan Studies in Water Resource Management series, 2015, 292pages.

Reviewed by Bob Harris, Visiting Professor, Catchment Science Centre, University of Sheffield

The recent revival of catchment management as a practical concept for water resource management in the UK and the publication of the 2nd River Basin Management plans for the Water Framework Directive later in 2015 makes this book timely. The book is based on two successful research projects undertaken as part of the Rural Economy and Land Use (RELU) programme and is written by a combination of researchers and practitioners, some with long experience of more integrated approaches than the more recent attempts in the UK.

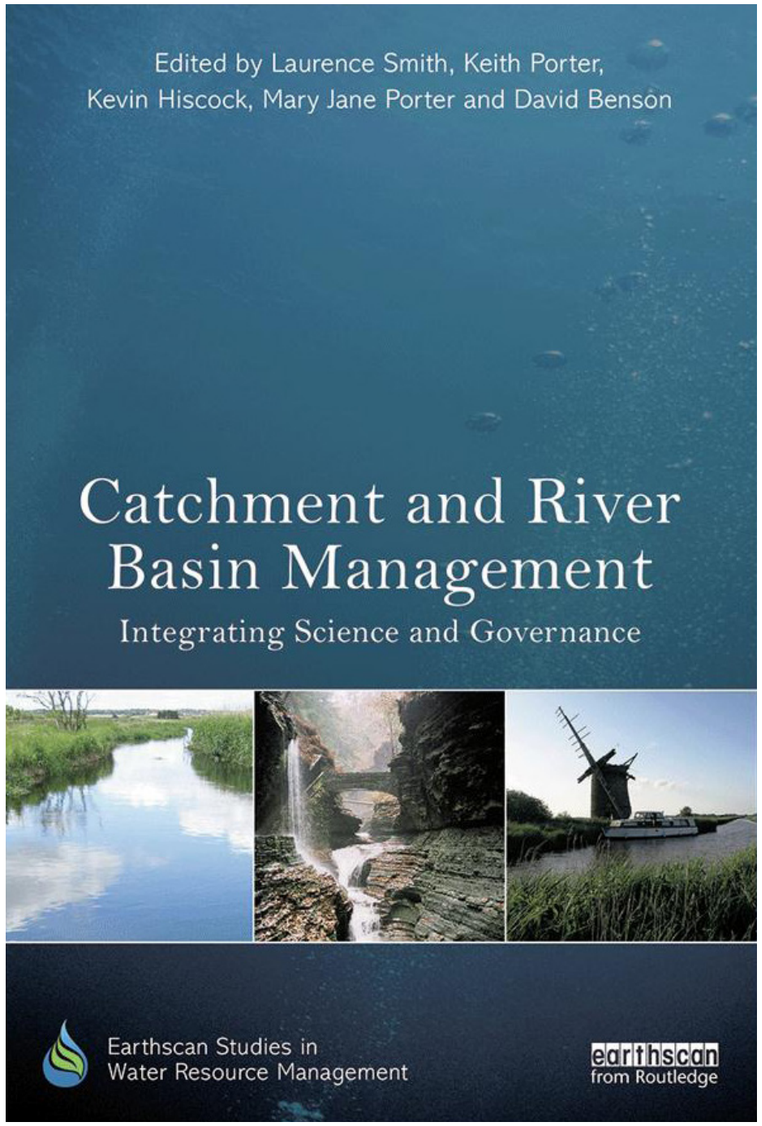
The book is divided into three parts. The first introduces the challenges faced in catchment management and the concepts for addressing them. It sets a framework for comparing and analysing the nine case studies that follow in the second section. Three are taken from the US (Upper Susquehanna, New York City watershed and Hudson river), one from Australia (S E Queensland), three from northern Europe (Aalborg, Denmark, Lower Saxony, Germany and Drenthe Province, Netherlands) and two from the British Isles (Ballinderry and Loweswater). The case studies are mostly long-standing and cover a wide range of scales (from 22000 to 8 km2) with the management issues involving a variety of ecosystem services, drinking water quality often to the fore.

The approaches taken, and which are seen to achieve success, vary accordingly but there are a number of common principles which can be established and which the authors have drawn together. The third part sets these commonalties out in terms of, inter alia, integrating knowledge with decision-making, forming collaborations and partnership working, using communications tools effectively, developing a balance between formal and informal governance arrangements, offering a plethora of advice based on practicalities which have been known to work.

The book will be particularly useful to those engaged in Catchment Partnerships through Defra's Catchment Based Approach (CaBA) programme, whether in pointing out ways forward or giving confidence that persistence with building communities of practice will gain success in the longer term - anyone starting in catchment management will soon realise that developments do not happen overnight!

We are particularly poor in the UK at taking learning from elsewhere and applying it to our own problems. This book shows that there are commonalities of approach to the management of complex systems such as river and groundwater catchments, no matter what the geology, landscape, legal system, culture or problems to be addressed. People are at the heart of achieving success and the sooner we realise that the sooner we might make progress.

I heartily recommend this volume. It is well written and can be read as a whole or used as a reference book for dipping into. Hopefully a future volume on the subject will have many more UK case studies to draw on, some of which may have taken the information and principles set out in this book for their inspiration.



Court of Justice of the European Union:

Water Framework Directive obligations concerning enhancement and prevention of deterioration

In a recent case the ECJ determined that the obligations laid down by the Water Framework Directive concerning enhancement and prevention of deterioration apply to individual projects such as the deepening of a navigable river.

Accordingly, the Directive precludes authorisation of such a project where it may cause a deterioration of the status of the body of water concerned and no derogation applies.

bit.ly/wfdecj

Upcoming EPA Research Events

Nov. 5th: The role of passive sampling in future monitoring programmes

Organisation: Dublin City University
Tickets: http://www.dcu.ie/water/events.shtml

Nov. 25th: Water Management and Community Engagement Workshop

This 'Water Management and Community Engagement' Workshop will bring together water managers, environmental professionals and representatives of local communities to discuss and debate the role of communities in water resource management and how improvements can be made in Ireland to move towards more integrated water management.

Organisation: TIMe Project, Dundalk IT
Where: Crown Plaza, Dundalk
When: 25th November 2015

Tickets: https://www.eventbrite.ie/e/water-management-and-community-engagement-workshop-tickets-17304668730

Recently Published Research

EU Research: Going full circle with our wastewaters

EU researchers have been busy developing new technologies that would enable wastewater plants and water-intensive industry to step up their game. Some of these technologies are presented in this magazine.

bit.ly/fullcirclewastewater

EPA Research 144: The Protection of Water Resources: Developing Novel Sensor Materials

This project aimed to develop polymer-coated, membrane-based technologies that could be used to detect organic contaminants, nitrates or heavy metals, namely chromium and copper, in aqueous systems.

bit.ly/epanovelsensors

EPA Research 153: Identifying the Biological and Geographical Origins of Faecal Contamination

The aim of this project was to develop a tool box for Microbial Source Tracking (MST), to enable water quality managers to identify the biological and geographical sources of faecal pollution of water bodies.

bit.ly/biogeofaecal

Droplet:
Database of Research Outputs, Projects, Literature and Environmental Technologies

DROPLET (Database of Research Outputs: Projects, Literature and Environmental Technologies) is our new, easy-to-use interactive web application for exploring information about projects which have been funded in Ireland on Water Research.

It has been developed by the Environmental Protection Agency but includes projects from many other funders of environmental research in Ireland.

DROPLET is available at:
http://erc.epa.ie/droplet/

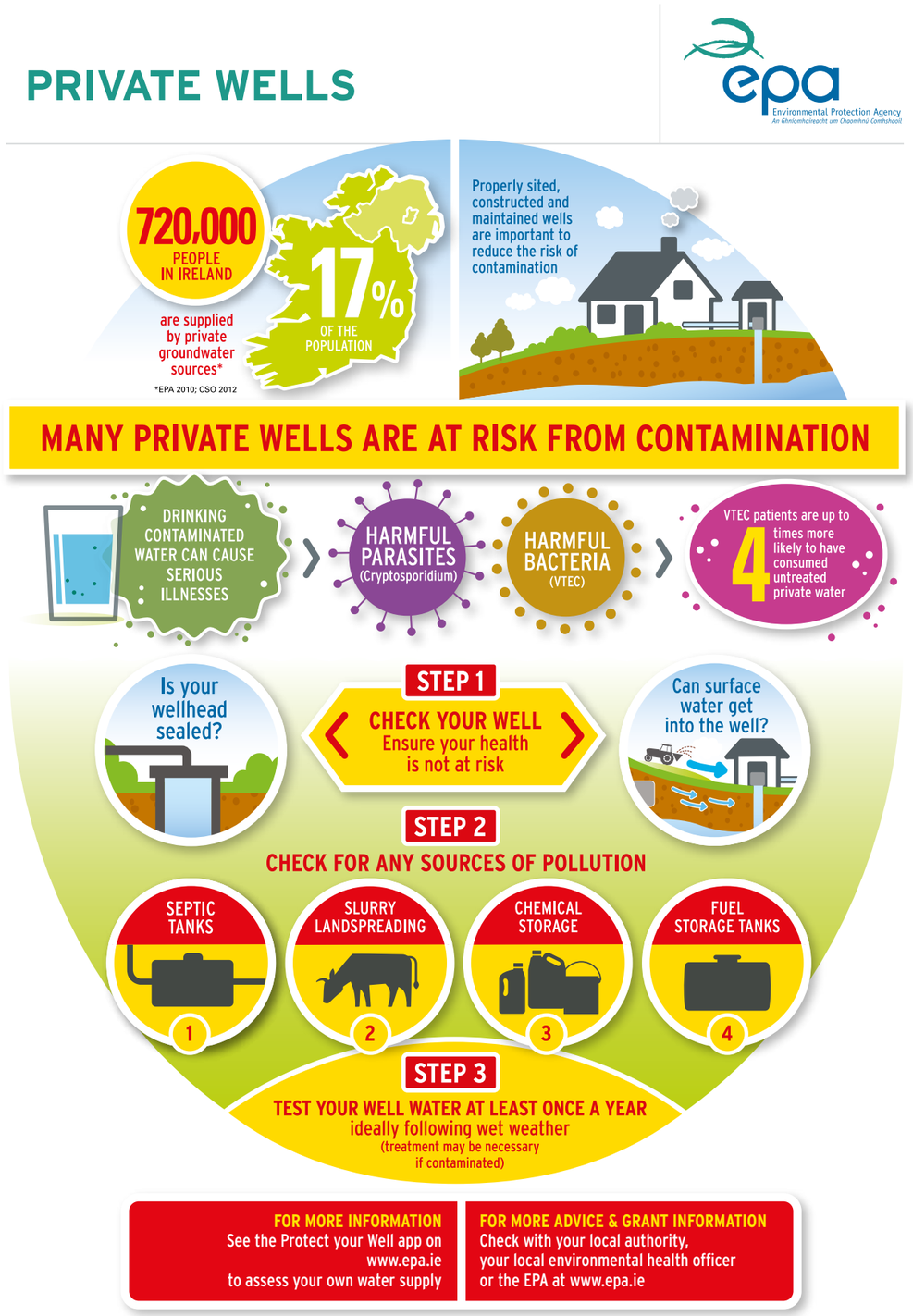
Check it out and register to submit information on your projects. We welcome your comments on our new interface – Please send them to dropletadmin@epa.ie

Water Joint Programming initiative

The Joint Programming Initiative "Water Challenges for a Changing World" (the Water JPI) is an intergovernmental initiative aiming at strengthening European leadership and competitiveness in the field of water research and innovation whilst safeguarding water resources.

The Water JPI is harmonizing and mobilizing National and Regional Research, Development and Innovation (RDI) Programmes. For more information, please contact Alice Wemaere, or see the EPA's Water JPI webpage at bit.ly/epawaterjpi

European JPI Site: http://www.waterjpi.eu/



PRIVATE WELL CONTAMINATION RISK

PRIVATE WELLS

epa Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

IS YOUR PRIVATE WELL AT RISK FROM CONTAMINATION?

Many people assume that because their water comes from a well or a spring that it is safe to drink ...but this is NOT necessarily the case

THERE ARE TWO MAIN THINGS TO CHECK TO MAKE SURE THAT CONTAMINATION IS NOT GETTING INTO YOUR WELL

1. Is your wellhead sealed?
2. Can surface water get into the well?

CHECK POSSIBLE SOURCES OF CONTAMINATION

- SEPTIC TANKS
- SLURRY LANDSPREADING
- CHEMICAL STORAGE
- FUEL STORAGE TANKS
- ANIMALS NEAR WELLHEAD
- ABANDONED BOREHOLES

YOU SHOULD GET YOUR WELL TESTED AT LEAST ONCE A YEAR

Your local authority Environment Section or HSE Environmental Health Officer may be able to advise on a suitable laboratory

IF YOUR WELL IS CONTAMINATED YOU SHOULD:

Take action to eliminate sources of contamination;
and Install treatment;
OR
Connect to a public or group water supply

VISIT YOUR LOCAL AUTHORITY WEBSITE OR THE PROTECTING YOUR PRIVATE WELL SECTION OF WWW.EPA.IE

CAN YOU CONTRIBUTE TO THE NEXT ISSUE?

Do you have a story you would like to tell, or a resource you would like to share?

The Catchments Newsletter is issued quarterly at the start of March, June, September and December. If you would like to submit an article, please email catchments@epa.ie and let us know. The deadline is one month in advance of publication. The only rule is you need to avoid acronyms, if at all possible.

epaCatchments

Healthy • Resilient • Productive

Valued water resources supporting vibrant communities

For further information

www.catchments.ie

EPA Catchments
McCumiskey House, Clonskeagh, Dublin 14

053 916 0600

catchments@epa.ie

@EPACatchments

YouTube.com/EPAIreland

SlideShare.net/EPAIreland

Pinterest.com/EPAIreland