

A NEW LOOK FOR FWR

WHICH HAS NOW BEEN IN OPERATION SINCE 1989

During this time FWR has been constantly evolving in order to keep pace with the changing face of the water industry and the public's expectation. As a Membership based organisation and a registered charity this has been no mean



feat and would not have been possible without the guidance from our Council and backing from our Members and supporters.

With the approval of the River Basin Managements Plans by the Ministers last year the WFD implementation is entering a new stage.

There is again a need for FWR to streamline its activities and we have decided to regroup these into four main areas with a specialist leader in each.

Each of these areas is now featured in this new style Newsletter and on our newly presented website where regular features and updates can be found. We do hope you will find the changes helpful and of value.

Caryll Stephen
Chief Executive
of the
Foundation for
Water Research



FOLLOWING THE PUBLICATION OF THE RIVER BASIN MANAGEMENT PLANS

the implementation of the Water Framework Directive has entered a new stage. The beginning of this year also meant a new stage for the WFD Information Centre. The Centre will continue its activities but in closer co-operation with other areas of activities of the Foundation for Water Research (FWR) with a new look joint website and this new style FWR Newsletter.

In this issue we present the changes and describe what information and services we shall offer. On the title page Caryll Stephen, the Chief Executive of the FWR, outlines the background and aims of the new organisation structure.

The roles of the four FWR sections, i.e. the WFDIC, Wastewater, Water Supply and FWR Library are described by the section specialists on pages 2 to 6. In addition, you will find reports on recent conferences and meetings where FWR was involved on pages 7 and 8.

For more information we invite you to have a look at our new FWR website, where each of the four sections have, or will have, its own News page, in addition to the more general FWR News page. You can access our FWR Home page both, at <http://www.euwfd.com> and at <http://www.fwr.org>. You can also contact us by email or telephone (see details on the last page).

The Editor

FWR Foundation for Water Research
the information centre for water, wastewater and related environmental issues

FWR Search About Us News Site Map Contact Us

You are here: Foundation for Water Research

Welcome to our website

Welcome to our information sites

- Water Supply
- Wastewater
- WFD IC
- FWR Library

Explore our Website and discover more about FWR. We may be able to help each other. Use the 'Contact Us' link to find our location and to discover the benefits of Membership. Use the Inquiry link to comment and to keep in touch with our activities.

What's New on our website?

- Latest News - February 2010
- Newsletter - Issue 3 - 2009
- Events Diary - February 2010
- Draft River Basin: how is it being implemented, who the key players are and how it is relevant.
- Wastewater: meeting notes
- New Statistics Advisory Group for Water Industry - Water Supply News

Website updated: 10th March 2010

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THIS ISSUE

New Look FWR

• Introduction by Caryll Stephen	page 1
• The Role of FWR's WFDIC	page 2
• The Role of FWR's Wastewater	page 3
• The FWR Library	page 4
• The Role of FWR's Water Supply	page 5
WATER News	page 7
FWR News	page 8

THE ROLE OF FWR'S WFDIC SECTION

by Neil Tytler, Ivana Wilson and Liz Morrison

WHAT HAVE WE ACHIEVED SO FAR?

WFDIC, the Water Framework Directive Information Centre was set up within the FWR at the beginning of 2005 when the implementation of the Water Framework Directive 2000/60/EC, after it had been transposed in UK law in 2003, was beginning to pick up speed. One of the key features of the WFD implementation is that it relies on active involvement of all interested parties, in particular in the production, review and updating of the river basin management plans, RBMPs (Article 14 of the Directive).

Our main aims over the past five years were:

- to help to increase understanding of the water environment and of the challenges and opportunities created by the WFD
- To collate and make available information on current developments and activities in river basin management in general and WFD implementation in particular, and in related areas such as climate change, biodiversity, soil, SUDS and the marine environment.

During the past five years we have developed our website (www.euwfd.com), added experts' Notes on Water Themes and WFD, published online over 40 issues of WFD Events Diaries, over 30 issues of WFD Latest News and 16 issues of the topic -focussed WFD Newsletter, the predecessor of this FWR Newsletter.

We have been lucky to have some of the top experts from the UK and the EU to write the key articles for our Newsletter on a range of topics on WFD implementation. Statistics show that average monthly visits (sessions) to our website have increased from around 2,000 during the first year to around 20,000 in the second half of last year. In addition, we had information stands at festivals, gave presentations at conferences and to visiting delegations from abroad, answered numerous enquiries from students and general public and participated in WFD events and stakeholders meetings.

During the early years of the WFDIC we received valuable sponsorship from the Environment Agency, SEPA, the Scottish Government, the

NIEA, Scottish Water, CCWater and several Water Supply Companies that helped us, in particular, in setting up the website and its contents. Unfortunately, tightening of their budgets meant that the WFDIC activities are now almost fully funded by the FWR.

WHAT ARE OUR AIMS FOR THE FUTURE

We shall continue in all the activities as described above, albeit under the corporate FWR umbrella.

- With the publication of the RBMPs the WFD implementation has moved into a new important stage of delivering the commitments. This should mean an even broader spectrum of interested public to get involved as co-deliverers on regional, catchment and local scale (river restoration projects, environmentally sensitive farming schemes, local government planning, SUDS, construction of wetlands, cleaning of beaches and many others).
- The regional River Basin Liaison Panels will continue their work, including monitoring of the progress of the RBMPs and preparing for the second cycle of River Basin Management Planning.
- There will be the new Floods and Water Bill, a new Marine Strategy Framework Directive, new or revised Regulations (WFD Daughter Directives, Phosphates Ban in Domestic Laundry Cleaning Products) and new measures (such as the Water Protection Zones WPZ)
- More research projects will be undertaken to provide information where gaps have been identified and to increase confidence in the effectiveness of proposed measures.



Neil Tytler



Ivana Wilson

We aim to continue to be a valuable source of information on all the upcoming topics and issues relating to river basin management in general and the implementation of the WFD in particular. The bulletins, now renamed FWR Latest News and FWR

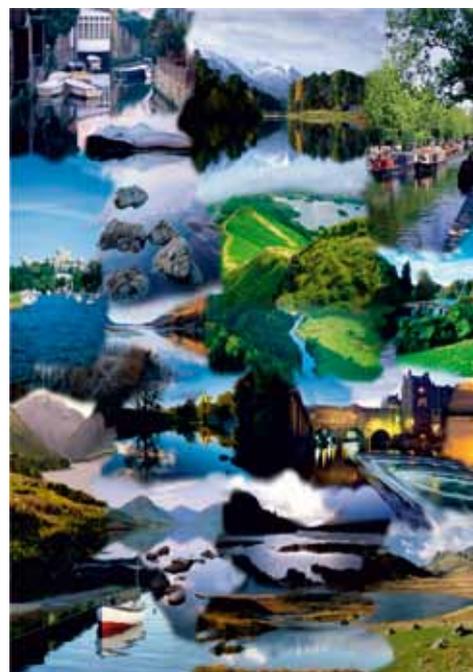


Liz Morrison

Events Diary will continue as before but will now include more information specific to water supply and wastewater, the two new FWR areas of activities.

For the FWR Newsletter we shall also invite experts in the water supply and wastewater field to prepare a key article for some of our future topic-focused issues and each issue will contain more information concerning water supply and wastewater.

Of course, we welcome your comments how to improve the value to you of the services we provide.



THE ROLE OF FWR'S WASTEWATER SECTION

by Tim Evans

Wastewater management and the resources it contains are hugely important in the water cycle. There are lots of complications, the science of which needs to be understood and shared, that is a role that FWR's wastewater section undertakes. The first step is collecting urban run-off and wastewater discharges and conveying this wastewater, either in the same pipes or in separate ones so that the wastewater does not cause flooding and other problems.

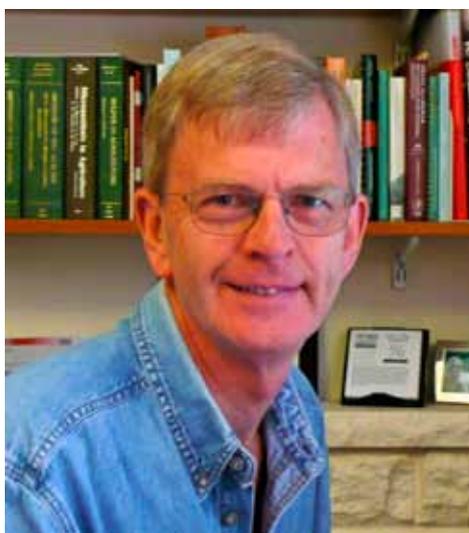
These sewer pipes are not inert, biofilms develop on the walls and change the composition of the wastewater by the biological activity that goes on within them; this is complicated and, as yet, not well understood. It is certain that what goes into a sewer is not necessarily the same as what comes out at the other end but we don't understand the processes and kinetics sufficiently to make predictions.

The next step in wastewater management is to treat the collected wastewater so that the recovered water is safe to release to the environment. Some streams and small rivers would be dry in summer if it was not for the reclaimed water from wastewater treatment works.

An expected consequence of climate change is that extreme weather events will happen more frequently. An intense rain storm that we might have expected to occur only once in 50 years can be expected to occur once in 5 years in future. To cope with this we shall need to adapt our infrastructure. FWR works with WaPUG and other professionals and policy makers to share knowledge of how this can be done and identify where there are gaps in our knowledge that need to be filled. This is an emerging area.

There are opportunities to use a combination of "green infrastructure" backed up by "grey infrastructure" to create systems that are more resilient, more sustainable and less expensive than relying entirely on "grey" systems. For example rainwater gardens that slow down the rate of run-off reduce the rate of flow into drainage systems so that their capacities are not exceeded and they do not overflow.

Water is a powerful solvent, which is one of the reasons it is critical for life, because of this we can find in wastewater



Tim Evans

(maybe only in trace amounts) most of the chemicals used in society, however it is not the mere presence that is significant but the concentration that really matters. As Paracelsus said 500 years ago, "the dose makes the poison" by which he meant that there has to be a pathway that delivers a harmful dose for a substance to be a poison [or risk]. Understanding the sources, concentrations, persistence [how much will decay] and pathways is fundamental to science-based environmental protection.

Phosphate (P) is a chemical in wastewater of a special importance. It is essential for every cell because it is part of DNA and energy transfer so we don't want too much in rivers and lakes otherwise algae and other plants grow excessively (eutrophication). However P is not very abundant in the Earth's crust and when we have used it all we are in deep trouble. As Isaac Asimov put it:

"...life can multiply until all the phosphorus is gone, and then there is an inexorable halt which nothing can prevent.... We may be able to substitute nuclear power for coal, and plastics for wood, and yeast for meat, and friendliness for isolation - but for phosphorus there is neither substitute nor replacement." "Asimov on chemistry" (1974) Doubleday Company, New York.

At the current rate of extraction (80% of which is used as fertiliser) we shall exhaust today's resources in 60 years and then there might be a further 200 years of new reserves.



Spreading biosolids (© Tim Evans)



Anaerobic digesters at the Reading Wastewater Treatment Works (© Tim Evans)



Wastewater

the information centre for water, wastewater and related environmental issues

WASTEWATER

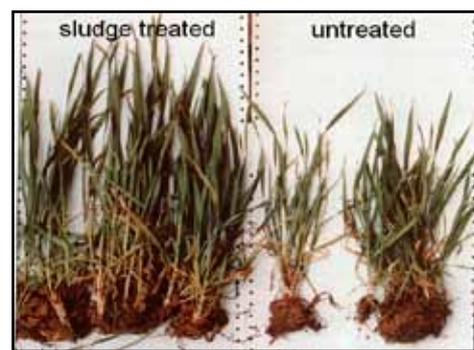
Without P there would be no food, but adults excrete 98% of the P in their diets because they are turning over cells rather than laying down new ones – this P ends up in wastewater and can be recovered at wastewater treatment works. P recovery for use as fertiliser is an important new area of interest for wastewater professionals.

Wastewater treatment works also recover the organic matter in wastewater and very frequently this is treated by anaerobic digestion to produce biogas, which is 65% methane, that is used as renewable, non-fossil energy, which helps to reduce the climate change effect of energy production, and biosolids biofertiliser that is used to complete nutrient cycles and also build soil organic matter. Soil organic matter is important in the water cycle because it stabilises soil structure, which means rainwater infiltrates into soil more easily and also that soil is more resistant to erosion so, for example, it does not clog the spawning grounds of fish.

There is a lot of science behind the use of biosolids:

- How much of society's chemicals accumulate in the biosolids and how much is available to plants and soil microorganisms?
- How much is acceptable?
- Is there a case for banning or severely restricting some chemicals?
- What treatment conditions are needed to control the risk of disease transmission?

All these questions have been researched and the results used to produce a practice that is safe and beneficial to the environment as a whole. It is always useful to know more and FWR aims to share this emerging knowledge and test and probe scientists' knowledge.



Winter wheat with and without biosolids treatment (© Tim Evans)

FWR's wastewater sector aims to share knowledge of all these areas and probe the gaps so that further research and policies can take account of the many facets and achieve the proper balance that is needed for a science-based, recycling-society.



Library

the information centre for water, wastewater and related environmental issues

FWR LIBRARY



THE ROLE OF FWR'S LIBRARY SECTION

by Gordon Jones and Debbie Ruck



The FWR Website (<http://www.fwr.org>) is in the process of being reorganised to reflect changes in the functions of the Foundation. As with both the Cryptosporidium Forum and the Environmental Economics Forum, the Eutrophication Forum is to be discontinued. Under the new regime the Wastewater Forum will continue as a separate section of the FWR operation and will have its own section of the corporate website.

All information pertaining to the discontinued Forums will remain on the website, accessible either through users existing 'favourites' links, or via an internet search engine.

The 'FWR Library' will continue the commitment to support the archive of references to historical data, eg the WRC Core Research Programme, as well as

maintaining all the existing links to other relevant organisations. Additions to the archive will continue as they become available.

FWR Rocks (Reviews of Current Knowledge) and Guides will continue to be an important part of the Library. Summaries or the full documents may be viewed and printed

copies are available to purchase from the Bookshop. Updates and new topics will be introduced from time to time.

The Bookshop lists all publications disseminated by FWR, (including Scotland & Northern Ireland Forum for Environmental Research (SNIFFER) and the Water Research Commission of South Africa), and summaries of most reports may be viewed.

The Publication Catalogue may be searched and downloaded, and is also available on CDROM. Publications may be purchased from the Bookshop, with many being available to order on line.

THE ROLE OF FWR'S WATER SUPPLY SECTION

by Tony Lloyd

PRIVATE WATER SUPPLIES

The Private Water Supplies Regulations 2009 came into force on the 1st January 2010. The new Regulations, which replace the Private Water Supply Regulations 1991, were necessary because the 1991 Regulations did not adequately transpose the requirements of Directive 98/83/EC on the quality of water intended for human consumption.

The new Regulations follow the implementation in Scotland of the Private Water Supplies (Scotland) Regulations 2006. DWI, the Drinking Water Inspectorate, has posted draft guidance on the legislative background to the private Water Supplies Regulations 2009 on its website. The document is intended as an addition to Private Water Supplies: Technical Manual. DWI is inviting comments from professionals regulating and maintaining private water supplies.

The 2009 Regulations have focussed attention on the quality of the drinking water received by the estimated 1% of the population that is served by a private water supply (PWS). A recent survey¹ of the microbiological quality of PWS in England reported that over 30% of the 11,000 supplies for which data was available contained faecal coliforms. By way of comparison, data published for 2008 by the Drinking Water Inspectorate, showed that in public water supplies, the failure rate for faecal coliforms in samples taken from consumers' premises was typically less than 0.02%. The presumed risk to the health of consumers served by PWS may affect a far greater population than the 1% nominally served by a PWS. Many PWS serve camping, caravan and other holiday sites, where the transient nature of the populations visiting such sites results in a correspondingly larger number of consumers being exposed to pathogenic organisms.

How is it being implemented?

It is understood that Local Authorities (LA) have welcomed the approach provided for by the new Regulations, although they are still trying to come to terms with the extra duties imposed on LA. In addition to the risk assessment requirements, LA now



have duties under the 2009 Regulations and under the Water Industry Act 1991 to serve notices, with different penalties and appeals procedures. Furthermore, detailed information must be provided on every single supply to the Secretary of State by July 2010. A considerable workload is potentially associated with the requirement to monitor private distribution networks such as those associated with universities, shopping malls, airports, and hospitals. The requirements to use approved products and substances in PWS is causing concern both among LA and suppliers of water treatment equipment. It is understood that Defra have received a number of comments about the impracticability of introducing an immediate requirement for approval of products that have hitherto been exempted from any approval requirement.

How is FWR involved?

FWR is collaborating with the Royal Society for Public Health in the organisation of the conference "Private Water Supplies - The New

Regulations: Six Months On", which is to be held on July 1st 2010 at the Society's offices in London. The event will provide a forum for review of experiences in implementing the Private Water Supply Regulations 2009. (For registration details contact Jennifer Tatman (jtatman@rsph.org.uk))

During the conference, FWR will be seeking feedback from delegates on a proposal to establish a private water supply forum with the following mission: To provide an information resource for those with responsibilities for ensuring a safe supply of potable water from a non-mains supply. It is anticipated that the forum would function principally as a web-based forum, with periodic meetings on topics of interest to forum members.

FWR has commissioned David Clapham, Principal Environmental Health Manager with Bradford Council, to prepare an FWR Guide to assist householders who are served by a PWS to understand their responsibilities. David has been involved in environmental health for over 30 years and is the author of a number of publications on PWS, notably Small Water Supplies: A Practical Guide published by Spon press and the Private Water Supplies Training Manual published by Aqua Enviro. David also served for many years on the Government's Expert Group on Cryptosporidium in Water Supplies.

REFERENCE

1. Hopi Yip Richardson, Gordon Nichols, Chris Lane, Ian R. Lake, Paul Hunter. *Microbiological surveillance of private water supplies in England-The impact of environmental and climate factors on water quality Water Research 43(2009) 2159-2168*

RESEARCH

The FWR website currently provides access to research outputs from a number of research funding organisations including DWI (summaries of Government funded water quality and health programme and freshwater environment programme from 1977 onwards), and the Water Services Association of Australia (Summaries of research outputs). In addition, the FWR Reports catalogue offers priced copies of a wide range of reports funded by Government, the Scotland & Northern Ireland Forum for Environmental Research (SNIFFER) and the Water Research Commission South Africa.



The FWR ROCK (Review of Current Knowledge) series of publications provide unbiased science-based information in a readable format on a number of water-environment topics that are of general interest. The FWR Guides focus on topics related to water supply, wastewater disposal and water environments, which may be the subject of debate and inquiry. The objective of each Guide is to provide an authoritative introduction to a topic in non-technical English. FWR also provides freely downloadable reports on funding opportunities for water-environment projects arising from the European Union's Framework research programmes.

The new FWR website will expand its research links by including all major research funding organisations that publish water supply related research in the English language. The website will provide a statement of each organisations rationale for funding research and information on how to access publications, including details of format, availability and cost.

RSPH Conference

Supported by The Foundation for Water Research



Private Water Supplies - The New Regulations, Six Months On

Royal Society for Public Health

Thursday 1st July 2010, 28 Portland Place, London W1B 1DE



On 1st January 2010, the new private water supplies regulations for England came into force. Local authorities and owners of private water supplies have subsequently had to interpret the legislation, reassessing safety and organising risk assessments, monitoring programmes and enforcement policies as part of the new approach. This conference will act as a six month review of the regulations, assessing the impact of them on both private water supplies and resources of local authorities. It will also provide an opportunity to clarify new requirements of the regulations and the supporting guidance. Experienced practitioners, legislators and experts from England, Scotland (where similar regulations have been in force for three years) and Wales will speak at the conference and talk about their experiences, ideas and suggestions for PWS.



Programme will include:

Introduction from Morning Chair

Anthony Lloyd
Water Supply Coordinator,
The Foundation for Water Research

The Private Water Supply Regulations 2009 – Progress and Good Practice
Teresa Isaacs, DWI Inspector, Drinking Water Inspectorate

Private Water Supplies Regulations – How the Final Version was Decided
Peter Jiggins, Head of Branch,
Water Supply and Regulation, DEFRA

Views From the Treatment Industry
Geoff Nemeec, Managing Director of Springhill Water Services Ltd and Director of UK Water Treatment Association

Views from Owners of Private Water Supplies
Deanna Ferrance, Water Manager, The National Trust

Practical Experiences of Risk Assessment
Liam Cooper, Technical Officer, City of Leeds

Practical Experiences of Organising the Monitoring Programme
Chris Moss, Pollution Officer (South),
Shropshire Local Authority

Introduction from Afternoon Chair:

David Clapham, Principal EHO, Bradford

Scotland Three Years On – What Difference Have the Regulations Made and What are the Pitfalls to Look Out For?

Dr Jackie Hyland,
Consultant in Public Health Medicine, NHS Fife

What's Happening in Wales?
Huw Morgan, Water Health Partnership in Wales Steering Group

Fancy a Drink? – How to Avoid Backflow in Plumbing Systems
Dr Steve Tuckwell, Managing Director, WRAS Ltd

Who should attend?

This meeting will provide an excellent opportunity to update on the new PWS regulations and to learn about their impact. The conference will provide an excellent discussion opportunity for Environmental Health Practitioners and Trading Standards professionals who want to update themselves and their Heads of Departments.

For more information, please contact Jennifer Tatman, Conference and Event Officer on 020 3177 1614 or jtatman@rsph.org.uk

EARLY BIRD SPECIAL – book by 26th March 2010 to receive an Early Bird discount!

CONSUMER INFORMATION

WATER SUPPLIERS' CUSTOMERS ARE ALREADY WELL SERVED by a wide range of web-based sources of information. An important influence on consumers' information needs from the 1990s onwards has been the role of the media in prompting concern and interest. Water Suppliers have always responded to the concerns of its customers, although in many cases an uninformed and sometimes hostile media prompted those concerns.

Current preoccupations include pharmaceutical residues, endocrine disrupters and other trace chemicals derived from human activities. The new FWR website will continue the tradition of the FWR ROCK and Guide publications by providing periodic unbiased, science-based commentaries on some of the longer-running water supply science issues

that have periodically been the focus of media attention. The website will also provide a resource for consumers who may need to find out about the chemical composition of their water supply. Information will be provided on why the consumer might need water composition data and how to obtain and interpret the data.



Defra's Water Stakeholders' Forum for England

THE LATEST MEETING was held in London on 26 February 2010. These consultation meetings continue to be very popular with more than 50 participants attending from a wide range of sectors, including the Environment Agency, the water industry, Local Authorities, environmental NGOs, agriculture, ports and navigation, energy and other industry.

- **Defra** provided updates on a wide range of current issues concerning water availability and quality, such as:
 - The progress of the Floods and Water Bill - the Bill has now passed into the House of Lords.
 - The Marine Strategy Framework Directive - the consultation ended in January. There are numerous activities before the deadline for transposition of the Directive to UK law on 15 July 2010.
 - WFD Daughter Directives - the Priority Substance Daughter Directive 2008/105/EC (PSD) must be transposed into domestic legislation by 13 July 2010; the new Groundwater Regulations came into force on 30 October 2009 and revised Groundwater (Water Framework Directive) Directions 2010 will be issued.
 - SUDS, Nitrates Directive, Environmental Permitting Programme (EPP2), phosphates in detergents, the revised Bathing Water Directive and others.
- **The Environment Agency** - With the publication of the River Basin Management Plans (RBMPs) in December 2009 the Agency is now working on delivering the commitments. Regions are identifying priorities and action plans are being established. The Agency has agreed to continue to support the RBD Liaison Panels to engage with co-deliverers of the RBMPs and to monitor overall progress of the implementation. Support from many sectors, including the water industry, ports and navigation and agriculture has been invaluable.



- **Implementation strategy for the Thames RBMP** was presented by Robert Oates from the Thames River Restoration Trust, outlining the timetable for action, prioritising actions and catchments and developing Catchment Restoration Plans.
- **Diffuse pollution measures** - Both agricultural diffuse water pollution (ADWP) and non-agricultural diffuse water pollution (NAWDP) have been identified amongst the most significant pressures in the RBMPs. Measures are being developed for managing NADWP, in particular SUDS, Floods and Water Management Bill, a new proposal concerning sewers misconnections, banning phosphates in detergents and General Binding Rules (GBRs).
 - Diane Mitchell from NFU outlined ongoing partnership projects designed to protect the environment and reduce ADWP (Tried & Tested, The Voluntary Initiative, Campaign for the Farmed Environment, ECSFDI - Catchment Sensitive Farming Delivery Initiative).
 - Defra together with the Environment Agency, NERC, ADAS and other funders are supporting a major (6 million, 5 year) collaborative research programme Demonstration Test Catchments (DTC) to monitor the potential of sustainable on-farm mitigation methods for improving water quality and ecology as part of the EU Water Framework Directive. The principal aim of the DTC project is to test the hypothesis that it is possible to reduce cost-effectively the impact of agricultural diffuse water pollution on ecological function while



maintaining sustainable food production through the implementation of multiple on-farm mitigation measures.

- **Bathing Water Directive** - Peter Hampson, representing the British Resort Destination Association (BRADA) and the UK Beach Management Forum (UKBMF), presented their concerns relating to the revised Bathing Water Directive.

The Agenda, Minutes of the Meeting, presentations and other documents from the Defra Stakeholder meetings are available on our website:
http://www.euwfd.com/html/england_and_the_wfd.html

The Wastewater and Urban Drainage (WaPUG) Conference

Blackpool, 11-13 November 2009

Tim Evans and Neil Tytler attended the Wastewater Planning Users Group (WaPUG) Wastewater and Urban Drainage Conference in Blackpool on the 11th-13th November 2009.

FWR was one of the conference sponsors and had a stand in the conference exhibition – see photo on the left. Over 170 delegates attended the conference from a wide range of local authorities and water related organisations. The conference was split into five sessions plus three workshops over one and a half days covering topics on Surface Water Management Plan pilots, integrated modelling techniques, innovations in urban drainage methodologies, and asset management studies.



Neil Tytler of FWR explaining the WFD to Anthony McCloy, Director of McCloy Consulting, Belfast.



Tim Evans in discussion with Chris Chubb from the Environment Agency.

A large number of people visited our stand and took away the literature thereby raising the profile of FWR amongst those unaware of the work of the Foundation, particularly the reports on previous WaPUG workshops since 2002, various guides, ROCKS, and the Water Framework Directive Information Centre (WFDIC).

Meeting with a delegation from the Chingnam Development Institute, CDI, South Korea

Marlow, 16 December 2009

Delegates from the CDI, lead by the President Dr Kim Yong-Wong (see photo on the left), met with Neil Tytler and Ivana Wilson, FWR to discuss water management in the UK and in Europe in general and the Water Framework Directive in more detail. The CDI is a research institute for Chugnam Province, a fast growing region in central South Korea. The Institute is involved in a range of activities, including land use, urban development and renewal and water and environment matters. South Korea is embarking on the ambitious and controversial Four Rivers Restoration Project, aiming to improve water supply and quality and prevent flooding while providing a model for environmentally sound development.



Dr. Kim Young-Woong.



Neil Tytler in discussion with Dr Oh Hye-Jung and Dr Doshik Yang, organiser of the visit.



From left to right: Dr. Doshik Yang, Director of Urban Plasma UK, Dr. Oh Hye-Jung, Dr. Kim Young-Il, Dr. Kim Young-Woong, Ivana Wilson and Neil Tytler.

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