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## FROM THE CHAIR

*Mark Pennington, Chairman of the Rivers Group*

Hello and welcome to the first newsletter of 2012. While there has not been much correspondence from the group this year so far, our newly elected committee have been busy behind the scenes in organisation of several events that will be of interest and value to members.

We are pleased to be involved in the up-coming stormwater conference, where the Rivers Group is hosting a session of papers. We are also involved in a forum session where open discussion from the floor on relevant topics is welcomed. This year the forum will be on rainfall-runoff assessments and the need for some National guidance – momentum for this has already been established, and during this forum progress will be presented.

In tandem with the stormwater conference, the Rivers Group Committee is pleased to offer members attendance at two other events. The first of these, occurring on the morning of the day before the conference opening, is a workshop on Cultural Health Monitoring and Assessment of our waterways, and the second is an after-hours seminar on the effects that the Canterbury earthquakes had on rivers and flood protection schemes. The Rivers Group Committee is pleased to be able to offer these events free of charge.

As of our AGM last year we have a newly elected committee, made up of some old and some new faces. Please visit our website to see who's who and, as always, we welcome any feedback or comments from our members on Rivers Group matters.

For the coming months the committee will be focussing on our annual symposium (date and venue yet to be decided, suggestions welcomed), some local events (that is, several events spread throughout the country) and also on a re-run of our previously held Culvert Design Workshop. This time the workshop will be held in the South Island (Christchurch), to make it easier for our South Island members to attend. Please watch your inbox for further events.

We continue to invite ideas from the membership as to possible themes or events that they'd like to see co-ordinated by the Rivers Group. Check our website for information updates as they arise, and be sure to let us know of potential future activities and articles that we can distribute further to the group membership. We'd love to hear from you and have you be part of growing the group to be of value to our membership, rivers users throughout New Zealand, and also society in general. ≈

## MĀORI CULTURAL VALUES FOR WATERWAYS

*The Rivers Group in conjunction with Greater Wellington Regional Council - Te Pane Matua Taiao*

**When:** 9am – 12pm, Wednesday 9 May 2012

**Where:** Level 5 Committee Room

Greater Wellington Regional Council, 142 Wakefield St.

**Cost:** Free

The Rivers Group in conjunction with Greater Wellington Regional Council are pleased to present 'Māori Cultural Values for Waterways' with Caleb Royal (Ngāti Huia, Ngāti Kikopiri, Ngāti Raukawa).

Join Caleb in examining the waterways in the Wellington region using Cultural Health Monitoring as a tool to determine Māori Cultural Values.

A light morning tea will be provided.

Please register your interest by 5pm 7 May with Lee Rauhina-August [Lee.Rauhina-August@gw.govt.nz](mailto:Lee.Rauhina-August@gw.govt.nz). Get in quick because spaces are limited. ≈

# THE CANTERBURY EARTHQUAKES AND OUR RIVERS

*The Rivers Group in conjunction with IPENZ Wellington Branch and Greater Wellington Regional Council - Te Pane Matua Taiao*

**When:** 5:30pm – 7pm, Wednesday 9 May 2012  
**Where:** Level 5 Committee Room  
Greater Wellington Regional Council, 142 Wakefield St.  
**Cost:** Free

Canterbury Rivers were significantly affected by the recent earthquakes. The local and regional authorities have a big job to assess the effects of the earthquakes, repair damaged infrastructure and plan a new future them. Come and learn more about the rivers during a presentation from two people whose work revolves around them: Ian Heslop (ECan) and Graham Harrington (CCC).

Join Ian Heslop (Environment Canterbury) and Graham Harrington (Christchurch City Council) who will be covering the following topics:

- The basics: Where are our rivers and what are their tributaries/catchment areas?
- What condition were they in pre-earthquakes (incl. flora/fauna)?
- How were they being maintained?
- What effect did the earthquake have on them?
- What did we do immediately after the earthquakes and what are we doing now?
- What were/are we discharging to them and what effect is this having?
- What options do we have for their future?

Drinks and nibbles will be provided from 5:30pm.

Please register your interest by 5pm 7 May with Tom Parsons [Tom.Parsons@ghd.com](mailto:Tom.Parsons@ghd.com) ≈



# NZ RAINFALL- RUNOFF GUIDANCE

*The Rivers Group is hosting a forum at the Stormwater Conference.*

**When:** 3:00pm – 5pm, Thursday 10 May 2012  
**Where:** Amora Hotel, Wellington  
**Cost:** Included in registration for conference.

There is considerable uncertainty in application of an appropriate rainfall-runoff method to various regions within New Zealand. In some bigger centres, area-specific methods have been developed that are specified for use within these areas. In many smaller centres, there are no locally-specific guidelines and as a result, the methods applied in bigger centres are frequently used – sometimes erroneously.

With the methods that have been developed for certain larger regions in New Zealand, there is little consistency in results across these methods even with the same input data. This presents significant uncertainty, particularly for those regions where no locally specific data exist.

In response to member requests, the Rivers Group and the Water New Zealand Modelling Specialist Interest Group have begun consultation with the industry on rainfall-runoff analyses. There has been widespread support for the initiative of collation of appropriate methods for use in New Zealand, with guidance on where and when each may be applicable. This would result in significant savings to the industry in:

- Consent applications where analyses are undertaken using approved methods, saving the need for extensive justification of method employed and for peer review;
- No need for development of separate guidelines across all regions – one set of guidelines could apply nationally;
- Consistency in results across different methods would lend greater credibility to analyses, resulting in higher confidence in outputs.

The purpose of the forum is to discuss the Development of NZ Rainfall Runoff Guidance, report progress, seek feedback on options for different approaches, and explore content, staging and funding. ≈





# INSURANCE INDUSTRY PERSPECTIVE – STOPBANK RELIABILITY

*Daniel Manolache, Senior Engineering Specialist, FM Global.*

Flood protection schemes reduce the likelihood of flooding, but do not completely eliminate the flood hazard. They can be overtopped by a larger event than the design flood and may fail even when floodwaters remain below the intended protection height, due to poor design, insufficient maintenance or operator error.

In many parts of the world, stopbanks (levees) and flood walls have not historically been subject to the same (or any) level of regulatory inspections that dams have been subjected to. It is not uncommon for the owner of a flood protection scheme to be responsible for maintenance, repairs, emergency response and self-auditing. Depending on many factors, including resources, adequacy and reliability of flood protection varies from system to system.

FM Global's flood specialists currently are evaluating the maintenance and ongoing preparedness of key urban levees (stopbanks) throughout the world. Our proprietary techniques have been shared with a number of national agencies, including Federal Emergency Management Agency (FEMA) and the U.S. Army Corps Engineers in USA, and Delft Hydraulics in The Netherlands.

Simplistically, the focus of the review is on:

- design criteria;
- completeness of the system;
- performance history;
- emergency plans;
- operation and maintenance.



Properties protected by stopbanks (levees) constructed and maintained to reliably withstand a design flood with a frequency of 0.2% Annual Exceedance Probability (AEP) including a minimum 0.9 m freeboard are considered to be in a reduced hazard area. While terminology and appetite for accepting risk varies from one insurance company to another, a majority of insurance companies are interested in understanding the risk associated with the 1% AEP and 0.2% AEP floods.

FM Insurance Company trading as FM Global is one of the prominent underwriters of highly protected risks within the commercial property market and is widely recognized throughout the industry for its extensive loss control, risk management and engineering capabilities.  
[www.fmglobal.com](http://www.fmglobal.com)



Joint Defra/EA Flood and Coastal Erosion Risk Management R&D Programme

## Management of Flood Embankments

A good practice review

R&D Technical Report FD2411/TR1



The UK Environment Agency and Department for Environment Food and Rural Affairs published a useful guidance document that is available through the link below.

[http://evidence.environment-agency.gov.uk/FCERM/Libraries/FCERM\\_Project\\_Documents/FD2411\\_6509\\_TRP\\_pdf.sflb.ashx](http://evidence.environment-agency.gov.uk/FCERM/Libraries/FCERM_Project_Documents/FD2411_6509_TRP_pdf.sflb.ashx) ≈

# WHAKAORA TE REPO, KA ORA TE TOANGA WAI (WAIRARAPA MOANA - RESTORING OUR WETLAND TREASURE)

*Ian Gunn, Wairarapa Moana Wetland Project Co-ordinator*

This project has recently obtained funds from the Fresh Start for Freshwater Clean Up Fund administered by the Ministry for the Environment. The Ministry has granted one million dollars to be spent over the next 2.5 years which will be matched by the following partners in the project - Ducks Unlimited, Dairy NZ, Department of Conservation and Greater Wellington Regional Council. The focus is to reverse the continuing degradation of wetland habitat around the edge of Lake Wairarapa and Lake Onoke by reducing inputs of contamination, better understanding and managing hydrology and restoring wetland areas. The aim is to work with landowners adjacent to the edge wetlands. Property assessments will be developed into Land Environment Plans which will identify activities such as riparian fencing, wetland enhancements including new constructed wetlands, improving effluent and fertiliser practice.

Grants for these works will be available to the landowners. In addition within the existing wetlands there will be major weed, pest control and wetland hydrology improvements. Wairarapa Moana is the largest wetland complex in the southern North Island. It is of both national and international importance due to its cultural, ecological, economic, recreational and natural character values. A National Water Conservation Order was placed on Lake Wairarapa in 1989. The Moana qualifies as an international Ramsar site. An application for such status is under way. The water quality is poor having a trophic level index of 5.0 compared to Lake Rotorua with an index of 4.7.

Historically Wairarapa Moana and its surrounding wetlands were an unparalleled resource for tangata whenua; the tuna fishery provided food and a basis for trade that underpinned the wellbeing and cultural standing of a widespread community. A recent Waitangi Tribunal report addresses the loss of Wairarapa Moana to iwi as an issue to be addressed through settlement.

Tangata whenua are a leading part in the governance and management of this restoration process. The governance group comprises Ngati Kahungunu ki Wairarapa, Rangitane o Wairarapa, a local hapu, South Wairarapa District Council, Department of Conservation and Greater Wellington Regional Council. ≈



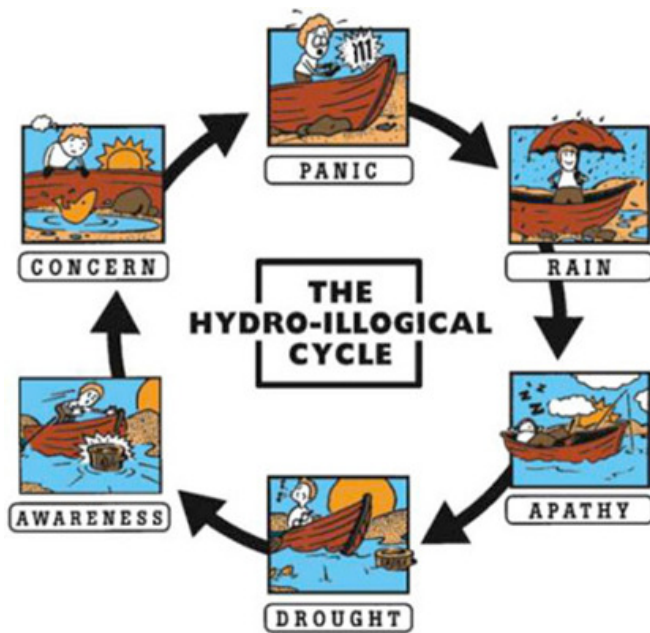


# WAIOLGY BLOG



One of the overarching challenges facing water resource experts in New Zealand is the exchange of ideas and knowledge. While different groups have their journals, newsletters or meetings, there is always room to improve how we share information between groups. Indeed, as we see with the Land and Water Forum, it is increasingly important to build a collaborative understanding of our freshwaters, among both professionals and the public. And so in an effort to foster greater scientific dialogue, NIWA has established the hydrology blog, Waiology.

Waiology's principle focus is the faster dissemination of public-funded NIWA hydrological science, associated as it is with an MSI-funded programme called Waterscape. But it also crucially provides a forum for experts outside NIWA and outside science, by way of guest posts and online interaction. While NZ's media focusses on water quality and biodiversity, Waiology focuses on water quantity and is quite comfortable with the occasional differential equation. In a way, Waiology serves as a water cooler for the water resources community and the public at large.



For more information, and to be part of the conversation, visit [www.sciblogs.co.nz/waiology](http://www.sciblogs.co.nz/waiology). ≈

# CONFERENCE UPDATE

## NZ Hydrological Society Conference

The HydroSoc conference will be held in Nelson this year from 27 – 30 November. This conference provides an excellent opportunity to find out about the science of hydrology and its application to the understanding and management of New Zealand's water resources.

<http://www.hydrologynz.org.nz/> ≈

## Water New Zealand Stormwater Conference 2012



The Rivers Group is hosting a session at the Stormwater Conference and also holding a forum session on rainfall-runoff. You can still register for this conference at the below address.

[http://www.waternz.org.nz/stormwater\\_conference\\_registration\\_details.html](http://www.waternz.org.nz/stormwater_conference_registration_details.html) ≈



*flow* is the official newsletter of the Rivers Group, is published quarterly, and is distributed to all Rivers Group members.

Limited advertising in subsequent issues may be considered.

We welcome contributions for future newsletters, and particularly appreciate any photographs of rivers that readers are willing to share. Please contact the editor, Mark Pennington, for further information: [mark.pennington@pdp.co.nz](mailto:mark.pennington@pdp.co.nz).

The views expressed in this newsletter are those of the individual authors and are not necessarily representative of the Rivers Group as a whole, nor of any of the individual or committee members.

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# rivers GROUP

A joint technical interest group of IPENZ & Water NZ