

E-newsletter No 1, 2008

Highlights and Achievements

Grant success

- The Minister for Climate and Water, Penny Wong has announced that CWMR's infrastructure grant application, developed by CWMR's David Pezzaniti, has been awarded. The grant of \$556,000 will be used to upgrade the Hydraulics Laboratories' water metering and irrigation test facilities to ISO/IEC17025 standards. In many respects infrastructure funding is often the hardest to obtain, particularly at this level. This grant success is therefore a major boost for CWMR's laboratories. David Pezzaniti has been leading our irrigation research programs, largely through CRCIF, and this has led recently to a number of successful outcomes. CWMR is also honoured to be currently hosting a two year visit from an international expert in irrigation, A/Prof Ali Hassanli, from Shiraz University in Iran.
- The Centre's adjuncts have been as busy as usual. In this and future e-news editions we will try to feature the work of some of our highly valued Adjunct staff. In this edition we describe some of the activities recently undertaken by Adjunct Prof John Argue. These include:

Professor John Argue gave a presentation entitled "Water in Adelaide: understanding the 'crisis', Green City Festival, Elder Park, 17 February, 2008.

Keynote presentation by Professor John Argue at a seminar organised by Melbourne Water in Melbourne, 20 February, 2008.

Professor John Argue ran a 2-day in-house workshop on Stormwater Management (source control) for Melbourne Water, 21/22 February, 2008.

Professor Argue has completed the 2008 update of "WSUD: basic procedures for 'source control' of stormwater - a Handbook for Australian practice" and the 2008 update of Student Edition of "WSUD Handbook".

Peer review of "State of the South Australian environment Report" (Water chapter) for EPA - 29 February, 2008 - well received.

Visit from Dr Steve Cooke of the Melbourne CSIRO group conducting National Water Commission survey of the 'take-up' of WSUD principles in the Australian urban landscape, in February 2008.

Research and Research Education



Summer Scholarship Students and staff at seminar

The CRC for Water Quality and Treatment and Water Quality Research Australia Limited held a reporting Seminar in Melbourne on 21st February. Nine students presented work completed during the 10 week national Summer Scholarship Program funded jointly by the CRC and WQRAL. The response from industry attendees was excellent. Lively discussion was enjoyed. On 22nd February the students were given a Technical Tour which included the Yan Yean Water Treatment Plant (run by United Utilities) and the beautiful Wallaby Creek Catchment. The latter is famous for its stands of Mountain Ash (almost 1 km in height), Tree Ferns and an historic stonework aquifer.



Mountain Ash



Stonework aquifer

New staff and student welcome-

Mr Stephen Whitehead has recently joined the Centre for Water Management and Reuse to work with David Pezzaniti and Richard Clark on the Waterproofing Northern Adelaide project. Taking a wholistic approach to water resource management in the northern suburbs of Adelaide, the project aims to integrate water systems management in order to maximise efficiency and utilise water resources optimally, this includes non-conventional sources of water such as stormwater, greywater and treated wastewater and incorporating these as part of the water supply cycle.

Stephen, who is a Research Engineer, has recently completed a double degree at UniSA in (Bachelor of Engineering (Civil and Water) and Bachelor of Applied Science (Biodiversity, Environmental and Park Management). He spent the last year working for Tonkin Consulting as an Engineer in the stormwater division.

New PhD student **Mr Usama Abdel Fattah Abu Risha** joined the Centre this year to complete his PhD studies, which he began a Flinders University, on groundwater at Dalhousie Spring in northern South Australia. Usama's home is in Egypt where he works as a hydrogeologist focusing on the hydrogeology of the regional groundwater aquifers that host old groundwater. His Bachelor degree is in Geology and his Masters course work was in Geophysical Exploration where he applied the Vertical Electrical Sounding (VES) technique to investigate subsurface water-bearing layers.

This work focused on the impact of the geological structures on groundwater of the Nubia Sandstone aquifer, which is very similar, in many aspects, to the Great Artesian Basin. The hydrochemical investigations represent an important approach in his studies. Currently he is using environmental and radioactive isotopes as tracers of groundwater recharge and evolution of Dalhousie artesian water. The study combines hydrogeological and hydrochemical approaches.

Seminars-

- Prof Simon Beecham, Director, SA Water Centre for Water Management and Reuse presented a seminar on [Design Aspects of Porous and Permeable Block Pavement](#) to the Australian Quality Water Centre on 26 February, 2008
- A/Prof Ali Hassanli, Visiting Professor with the SA Water Centre for Water Management and Reuse presented a seminar on [Water Management and Water Use Efficiency Improvement by Irrigation Scheduling for Sustainable Use of Effluent](#) to the School of Civil and Environmental Engineering, University of Adelaide, 25 February 2008.

Research Publications

2008 Journal and book chapters

Kandasamy, J., **Beecham, S.** and Dunphy, J., Effectiveness of Stormwater Sand Filters in Water Sensitive Urban Design, Journal of Water Management, Institution of Civil Engineers, UK, 161(2), pp 55-64, 2008

Pezzaniti, D., Beecham, S. and Kandasamy, J., A Laboratory and Field Investigation into the Effective Life of Permeable Pavements, Journal of Water Management,

Institution of Civil Engineers, UK (accepted for publication November 2007: Paper WM14877) 2008

Lee, A., **Hewa**, G. A., **Pezzaniti**, D. **Argue** J. Improving stream low flow regimes in urbanised catchments using Water Sensitive Urban Design (WSUD) techniques, Australian Journal of Water Resources, Canberra (accepted for publication) 2008

Clark, I. and Brake, L. Using local knowledge to sustain groundwater supplies in Arid Landscapes – The Flinders Ranges South Australia Geojournal (in press) 2008

Hassanli, A. M., Ebrahimizadeh, M. A. and **Beecham**, S., The Effects of Irrigation Methods, Scheduling and Effluent Reuse on Water Use Efficiency and Corn Yields in an Arid Region, Agricultural Water Management (in press) 2008

Hassanli, A. M., Esmaili, N. A. and **Beecham**, S., Evaluation of the effect of porous check dam location on fine sediment retention (a case study), Environmental Monitoring and Assessment (in press) 2008

2008 Conference publications

Clark, I. and Brake, L. 2008 Sustainable Management of Groundwater Resources in parts of arid South Australia Conference abstract International Association of Hydraulic Engineering and Research (IAHR), Istanbul Turkey June 2008

Hewa, G. A. Comparing the performance of four selected models in low flow frequency analyses- A case of Scott Creek in South Australia. Full paper has been accepted to the Water Down Under 2008

Hewa, G. A. and Van-Leeuwen J. Analyses of censored water quality data - A case of Mount Bold Reservoir. Full Paper has been accepted to the Water Down Under conference, 2008

Lee, A., **Hewa, G. A. and Pezzaniti, D.** Sensitivity of the SWMM parameters in the perspective of low flows. Full paper has been accepted to the Water Down Under conference, 2008

Nicholson, B. H. and **Hewa, G. A.** Evaluation of Flow Measurement Techniques in Dry Creek, South Australia. Full paper has been accepted to the Water Down Under conference, 2008

Beecham, S., Water Sensitive Urban Design: Going Underground, Keynote Paper, SIA Queensland and NSW Annual Conference, Stormwater Industry Association, paper accepted for 2008.

Dunphy, A., and **Beecham**, S., Use of Concrete Additives to Improve the Quality of Stormwater Runoff from a Car Park, 11th International Conference on Urban Drainage, IWA/IAHR, Edinburgh, paper accepted for 2008.

Dunphy, A., and **Beecham**, S., Protecting Groundwater Quality Using Porous Pipe and Engineered Soil Systems, 11th International Conference on Urban Drainage, IWA/IAHR, Edinburgh, paper accepted for 2008.

Chowdhury, R. and **Beecham**, S., Statistical Behaviour of Adelaide's Rainfall - Is Climate Change Detectable? World Environmental & Water Resources Congress, American Society of Civil Engineers, Hawaii, 2008.

International

Dr John Van Leeuwen's recent trip to China was a result of an invitation from the Professor Dongsheng Wang, Deputy Director, State Key Laboratory for Environmental Aquatic Chemistry of Research Centre for Eco-Environmental Research, Chinese Academy of Science (SKLEAC).

During the visit Dr Van Leeuwen had discussions on the research program of the Centre for Water Management and Reuse, particularly on water sustainability, wastewater treatment and reuse with BUCEA Vice President: Prof Zhang Yajun, Professor Wang Huizen (Counselor of Beijing Government) Xiaohong Zhao Deputy Director and Dr Liang Qiao of Golder Associates Pty Ltd Brisbane Australia. He gave a presentation on research work conducted on modeling coagulation and software through the CRCWQT to the SKLEAC group. He gave a presentation of research work by the centre to Professor Jiane Zuo, Head of Department of Environmental Science and Engineering. Prof Zuo expressed a strong interest on areas where both groups could collaborate with CWMR. He also met with Prof Wenjun Liu, Secretary General of the Chinese Society of Drinking Water Treatment (Tsinghua Uni) and discussed water treatment research and modeling.

Further discussions held with Professor Dongsheng Wang, Assoc Prof Baoyou Shi focusing on collaboration between RCEES, CWMR and SA Water in the area of coagulant development, novel types and modeling & software. In March one of his staff Li Tao will visit AWQC for three months and to work with Dr Chris Chow and Dr Van Leeuwen.

Dr Van Leeuwen was requested to be a co-supervisor of Professor Dongsheng's postgraduate students and was appointed adjunct professor till 2011.

Media coverage

The Water Report supplement in The Australian February 23-24, 2008 published an article on advanced research on sustainable water management undertaken by the Centre for Water Management and Reuse.

[Link to article.](#)

The Advertiser, February 14, 2008 published an article on the Biofiltration project on Torrens Lake. The research project is coordinated by Dr John Van Leeuwen, at the Centre for Water Management and Reuse.

[Link to article.](#)