



Australian WaterTools

for water management

Friday 5 October 2018

9:00–12:00

Workshop | Auditorium Zone B

Australia's Water reform journey at the policy level has been well documented: from the recognition that periods of low rainfall and severe droughts are a normal part of climate cycle, through national water policy reforms leading to our unique system of water entitlements, allocation and water sharing arrangements. A series of model developments were undertaken in parallel with policy initiatives to update our water information base and develop hydrological modelling tools as fit-for-purpose for Australia's climate.

In 2008, the Council of Australian Governments (COAG) requested an evaluation of the hydrologic modelling tools current at that time and a vision for future modelling needs to support Australia's continuing water reform journey. The resulting National Hydrological Modelling Strategy (NHMS) reviewed the state of hydrological modelling at the time of writing, set out the water modelling tools challenges facing Australia, and presented a roadmap for developing a comprehensive range of tools to meet Australia's needs over the coming decades including the Water-Food-Energy Nexus, Big Data and Climate Integration, Decision Support Systems and Real Time River Operations.

The NHMS remains a core guiding document and strategy for Australia. A decade on, the technical journey has advanced significantly but there are still many areas, particularly in the water-food-energy nexus and integrated urban themes, which are still in the research phase and yet to reach enterprise tool status.

For more information, visit booth #41 at the Asia Water Forum or visit www.waterpartnership.org.au

This workshop will present Australia's core national-scale modelling tools which have underpinned policy development and implementation, and outline a pathway for engagement with countries who wish to more rapidly improve their management of water scarcity.

Workshop Agenda

09:00–09:15 **Introduction: FTSE and Background to Australia's Technology Response to Water Scarcity**
Dr Don Blackmore, eWater Ltd

9:15–09:30 **Australia's WaterTools Initiative**
Dr Robert Carr, eWater

09:30–10:00 **Geoscience Open Data Cube**
Erin Telfer, Geoscience Australia

10:00–10:30 **Bureau of Meteorology Forecasting Tools**
Dr Daehyok Shin, Australian Bureau of Meteorology

10:30–11:00 **eWater Source**
Dr Robert Carr, eWater
David Hehir, eWater

11:00–11:15 **ESCAP Drought Mechanism and Australia's Integrated Tools**
Kelly Hayden, UN ESCAP
Dr Robert Carr, eWater

11:15–12:00 **Soft launch of WaterTools Guide & facilitated discussion**
Dr Don Blackmore, eWater Ltd

Contact

Geoff Davis – Executive Manager Software Development, eWater
E: geoff.davis@ewater.org.au
T: +61 2 6201 2293



Dr Don Blackmore AM, FTSE
*Chair of the International Water Management Institute;
Chair of eWater Ltd*

Don is a consultant and advisor with internationally regarded experience and expertise on water issues, having worked in Australia, South and East Asia, and North Africa. He is a Board Director for a number of major organizations dealing with water resources management. Don was the Chief Executive of the Murray-Darling Basin Commission for 14 years; and Director and Deputy Chairperson of the Land and Water Resources Research and Development Corporation Australia. Don is a Fellow of the Australian Academy of Technological Sciences and Engineering (FTSE) and in 2004 he was made a Member of the Order of Australia for his services to the environment.



Dr Robert Carr
CEO, eWater

Robert is an experienced hydrologist and hydraulics expert with 30 years of expert review, project, software development and management experience. After completing his Bachelor of Engineering (Civil) at the University of Queensland, Robert went on to complete an MSc in Water resources at Iowa State University, USA, in the physical modelling of energy dissipators in irrigation systems and then a PhD in groundwater/surfacewater finite element modelling for which he was awarded the University Research Excellence Award in 1985. Robert is a Chartered Professional Engineer and has worked in practice and advised extensively on the numerical modelling of floods, wastewater and IWRM for river basin systems around the world.



Erin Telfer
*Earth Observation Scientist,
Geoscience Australia*

Erin has a background in catchment hydrology, groundwater science and spatial analysis. Erin has been involved in the UN ESCAP Drought Mechanism Project and is responsible for developing an Open Data Cube for Cambodia and linking the satellite analysis platform to the eWater Source hydrological modelling software. Beginning her scientific career in catchment hydrology and then mining in New Zealand, Erin has hands-on water sampling and monitoring experience. After moving to Australia and working as a groundwater contamination specialist she started work at Geoscience Australia within the Groundwater Branch and then within the Digital Earth Australia program.



Dr Daehyok Shin
Forecast System Manager, Australian Bureau of Meteorology

Daehyok is a hydrological modeller and programmer for scientific and engineering computing. He studied electronics and computer programming, and remote sensing and geographic information system, at the Seoul National University, South Korea. Daehyok joined the Australian Bureau of Meteorology (BoM) in 2008 and has led several project teams to develop operational modelling systems for new streamflow forecasting services. He is also working on international projects to develop hydrological forecasting systems for India and Cambodia, and is currently leading a team to develop and maintain water forecasting systems at the BoM's head office in Melbourne.



David Hehir
Software Developer, eWater

David has primarily been involved with the ongoing development of eWater Source, Australia's National Hydrological Modelling Platform. This includes the development of custom reporting tools, environmental demand, urban demand and small scale constituent modelling. He has previously worked for the Australian Commonwealth Scientific Industrial Research Organisation (CSIRO) and Lockheed Martin, gaining experience in developing hydrology solutions, image processing and management systems. David holds a Bachelor of Engineering and IT from the Australian National University.



Kelly Hayden
Economic Affairs Officer, United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP)

Kelly works in the Space Applications Section of UN ESCAP leading the Regional Drought Mechanism, which builds partnerships between governments to provide tools, information and capacity building to developing countries for drought monitoring and management. Her career spans a broad range of issues over two decades from environmental protection, energy security, disaster risk reduction and the promotion of space applications for sustainable development. Kelly holds a Masters in Environmental Science/Engineering.

