



Water Research Australia Limited

ANNUAL REPORT 2012-13

Water for the wellbeing of all Australians



Water
Research
Australia

Emeritus Professor Nancy Millis AC MBE (1923 - 2012)

Professor Nancy Millis was most dear to the WaterRA community to whom she was a leader and mentor over the past eighteen years. Nancy was the Chairman of the Cooperative Research Centre for Water Quality and Treatment (1995 – 2008) and subsequently maintained her involvement through the Education Program and on the Scientific Advisory Committee. Nancy regularly attended the February Members meetings, which feature student presentations. She took a keen personal interest in the “Nancy Millis PhD Scholarship” presenting this award to the best student each year.

As a member of the Scientific Advisory Committee she often expressed strong views about maintenance of the quality of research.

Nancy was a microbiologist of international repute who made enormous contributions in agriculture, environmental protection, medicine and engineering.

From 1980 to 2000, she chaired the Federal Government’s genetic engineering surveillance committees (RDMC and GMAC), which established guidelines that have become models for other countries in our region.

As a researcher, Nancy was at the forefront of recognising the importance of clean water and led the development of techniques to treat industrial wastewater.

Nancy broke new ground for Australian women in science and in 1992 was appointed the first female Chancellor of La Trobe University.

In 1977, she became a Member of the British Empire (MBE) and in 1990 was made a Companion of the Order of Australia (AC).

Her integrity, persistence, forthrightness and ability to collaborate with others to achieve a successful outcome were some of her outstanding characteristics.

At a personal level, Nancy was rather a dynamo, and many Members will have sat next to her at a dinner and been regaled with some of her excellent stories and pithy observations. Her early involvement in the science of fermentation persisted into an educated appreciation of the products of the Australian wine industry!

Well into her eighties, Nancy was still engaged in a variety of activities, from being on the Board of Parks Victoria to accompanying the Chamber Strings of Melbourne on international tours.

The water community was most fortunate to have had the opportunity to see her in action and benefit from her wit, wisdom and skills.

The cover photo, of WaterRA Chairman Michael R Moore and Nancy Millis with Ana Martins, recipient of the Nancy Millis PhD Scholarship Award, was taken at our February 2012 Members Meeting.

Water Research Australia (WaterRA) ANNUAL REPORT 2012-13

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VISION, MISSION AND STRATEGIC PILLARS

BUILDING CAPABILITY

Build capacity and capability for high quality research to support the Australian Water community and facilitate knowledge transfer and uptake of research outcomes to mitigate risk and deliver value/benefits for our Members

SCIENTIFIC EVIDENCE

Provide scientific evidence to underpin the rolling review of guidelines relating to safe drinking water and recycled water

VISION

Water for the wellbeing of all Australians

MISSION

To lead and facilitate high quality and collaborative research of national significance and to ensure implementation of outcomes to address current and emerging issues in water

ADVOCACY

Promote importance on the national agenda of safe water to the Australian community

COLLABORATION

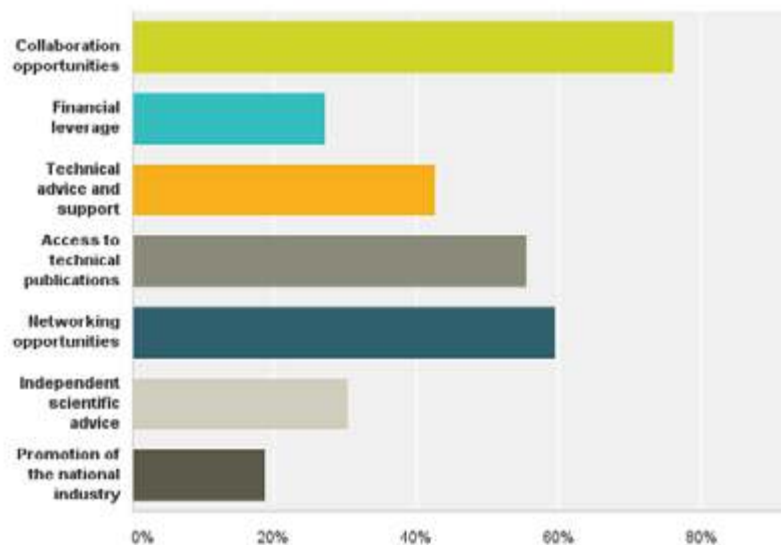
Develop and implement the research strategic plan to address water issues of national significance in collaboration with Members and other key stakeholders

WaterRA – WHAT WE DO



- Coordinate, prepare and deliver water industry-driven research projects on behalf of Members
- Manage research projects
- Assist with technical queries from Members
- Prepare fact sheets on specific topical matters
- Assist with networking across the industry, research and government sectors in water related matters
- Make submissions on behalf of the water community in response to discussion papers
- Build future industry capability and capacity by supporting student projects
- Facilitate water industry employee higher education degrees
- Liaise on behalf of water community around water research issues, nationally and internationally
- Advocate the importance of safe water on the national agenda
- Provide a body of technical knowledge that is freely available to Members via the website or on request

WHAT OUR MEMBERS VALUE MOST



(From October 2012 Survey - What are the top three benefits WaterRA membership offers you?)

PROJECTS COMPLETED IN 2012-13



- >> Evaluation of integrated membranes for taste and odour and algal toxin control (Gayle Newcombe et al, 1003/08)
- >> Alternative and innovative methods for source water management of algae and cyanobacteria (Mike Burch et al, 1005/09)
- >> Identification and prevention of chemical contamination causing taint and odour in water from coal tar enamel lined pipes (Felicity Roddick et al, 1010/09)
- >> Guidance manual for the minimisation of NDMA & other nitrogenous disinfection by-products in drinking water & recycled water (Gayle Newcombe et al, 1018/09)
- >> CyanoSurvey: a national update on toxic cyanobacteria and their distribution (Andrew Humpage et al, 1022/09)
- >> Capacitive deionisation for high recovery and low energy desalination of brackish water supplies (Linda Zou et al, 1025/09)
- >> *Cryptosporidium* Literature Review (Una Ryan, 1037/10)
- >> Characterisation of DBP formation for water quality management (Mary Drikas et al, 1041/10)
- >> MT-PCR – A rapid reliable and effective tool assessing toxic algal blooms in Victorian water supplies: aiding protection and preservation (Aaron Jex et al, 1043/10)
- >> Supply of roof-harvested rainwater to residential hot water services - microbial risk assessment (Dan Deere et al, 1057/11)
- >> Bioanalytical tools to analyse hormonal activity in environmental waters (Fred Leusch et al, 2014/11)
- >> The fate of engineered nanoparticles in wastewater: Literature review (Jan Herrman et al, 2025/11)
- >> Exposure assessment using tracer chemicals - Stage 1 (Martha Sinclair et al, 3002/09)

2012 - 13 HIGHLIGHTS

SCIENTIFIC EVIDENCE

>> Provide scientific evidence to underpin the rolling review of guidelines relating to safe drinking water and recycled water



13 PROJECT FINAL REPORTS (SEE OPPOSITE)

PUBLICATIONS - GENERAL

706 documents available for download from WaterRA website
34 peer reviewed journal publications
121 citations

6 Fact Sheets

Capacitive deionisation
Health-based targets for microbial safety of drinking water: introduction
Health-based targets for microbial safety of drinking water: stakeholder viewpoints
N-Nitrosodimethylamine
Optimisation of nutrient removal, membrane fouling and sludge dewatering in hybrid coagulation/submerged membrane bioreactor of wastewaters - Part 1
Optimisation of nutrient removal, membrane fouling and sludge dewatering in hybrid coagulation/submerged membrane bioreactor of wastewaters - Part 2

SCIENCE REVIEW AND ANALYSIS

WaterRA annual Research Blueprint review completed
4 Health Stream issues delivered to subscribers
Publication of the Research Showcase document
Research impact study - *Identifying and quantifying the impacts of cyanobacterial research on the Australian water industry*

2012 - 13 HIGHLIGHTS

COLLABORATION

>> Develop and implement the research strategic plan to address water issues of national significance in collaboration with Members and other key stakeholders



RESEARCH COLLABORATIONS

Total number of Member agencies in 2012-13 = 44

Total number of non-Member collaborating agencies (since 2008) = 187

Average no of collaborators per project = 5.38

Nine new collaborative projects initiated/awarded in 2012-13

CONSULTATION WITH MEMBERS

Two-day national industry workshop to prioritise issues for future work

Three Members meetings (Oct, Feb, Jun) - 155 members in attendance

ARC BATTING AVERAGE

80% (4 out of 5) ARC Linkage projects supported by WaterRA successfully funded, compared with 39% national average

WEBSITE USAGE

496 individual subscribers to our Member log in area

1,539 people on our extended mailing list

86,998 page views were recorded

What visitors to the website looked at most:

Drinking Water Quality Guidelines	1,566
Health Stream	1,229
Blog	1,056
About WaterRA	815
Research Projects	753

NEW COLLABORATIVE PROJECTS IN 2012-13



- >> On-line monitoring of cyanobacteria to predict coagulant doses and powdered activated carbon application in water treatment (Rita Henderson, 1066/12)
- >> Understanding and limiting the public health risks of *Cryptosporidium* and *Giardia* in animals in Australian catchments (Una Ryan, 1068/12)
- >> Optimisation of membrane based point of extraction treatment of groundwater drinking water supplies (David Waite, 1069/12)
- >> Interlaboratory comparison testing for nitrosamines in drinking water and recycled water (Rolando Fabris, 1072/12)
- >> Ultraviolet transmissivity project (Felicity Roddick, 2033/13)
- >> GWRC - EDC Toolbox II - analysing more than estrogenic activity in environmental waters (Fred Leusch, 2034/13)
- >> Alternate water use options for rural and regional wastewater: evaluating chemical and microbiological risks and extending the water cycle (Jeffrey Charrios, 3019/12)
- >> Resilient desalination pre-treatment of saline secondary effluent by ceramic membranes (Mikel Duke, 3020/12)
- >> Institutional issues for green-gray infrastructure based on integrated “One Water” management and resource recovery (WERF, 3022/12)

2012 - 13 HIGHLIGHTS

BUILDING CAPABILITY

>> Build capacity and capability for high quality research to support the Australian water community and facilitate knowledge transfer and the uptake of research outcomes to mitigate risk and deliver value and benefits for Members



STUDENTS SUPPORTED:

Current

- 20 PhD
- 2 Honours
- 1 industry member part-time Masters

Completed (2008 - 2013)

- 10 Honours
- 24 Summer Students

Total supported (since 2008) = 57

Students who completed in 2012-13

- Stefania Sotora - Hons (Flinders University/AWQC/GWMWater)
- Melissa Rapadas - Hons (University of NSW/Sydney Water)
- Madeleine Payne - Hons (Griffith University/SWRC/WaterRA)
- Sophie Day - Hons (University of Queensland, Entox/WaterRA)

NODE MEETINGS:

Held in SA, NT, NSW, Qld, WA, Vic/Tas

CONFERENCE SPONSORSHIPS:

- National Cyanobacteria Workshop, Aug 2012
- Biosolids Workshop - Linking Industry and Research, Dec 2012
- Smart Water Research Centre and Seqwater Pathogen Workshop, Feb 2013



Education Showcase
Building future expertise across the water industry



Education Showcase document

2012 - 13 HIGHLIGHTS

ADVOCACY

>> Promote the importance on the national agenda of safe water to the Australian community



NATIONAL AND INTERNATIONAL REPRESENTATION

National Committees

Active member of Australian Water Research and Development Coalition
Representation on NHMRC Water Quality Advisory Committee
Representation on advisory committees for Monash University, RMIT University,
Victoria University and Curtin University

International Committees

Board member of Global Water Research Coalition

WaterRA Committees

Maintain dialogue with state regulators through Regulatory Advisory Committee
Maintain dialogue with science leaders through Scientific Advisory Committee

COMMUNICATION OF ISSUES

Via website

90 news items published on the WaterRA website
Initiated monthly WaterRA Blog, 5 published
Water Quality Matters newsletter published monthly for Members

Presentations

Water in the Bush, Darwin
Sydney Catchment Authority Symposium, Penrith
OzWater '13 workshop, Perth
Project Leaders Workshop, AWRCoE, Brisbane
Professional Scientist Course, RMIT, Melbourne

CHAIR & ACTING CEO REPORT



This year, an important decision made by our Members was to change the company name to Water Research Australia Limited (WaterRA). This signals the intent to broaden our research scope to cover other aspects of water research - social and environmental issues - as well as water quality. This includes regional and remote issues. The catalyst for change was strong Member and Stakeholder feedback from a survey we conducted in December 2012.



Our company is evolving in a rapidly changing research environment. It is clear that there is potential for a bigger role for WaterRA in Australia. In this light, we are currently undergoing a review of our Membership model to ensure that it remains inclusive as we develop.

The core intent of WaterRA operations continues to focus on four strategic pillars - Advocacy, Collaboration, Building Capability and Scientific Evidence, albeit in a broader context. We have contributed significantly to each of these areas this year, including the following highlights.

Scientific evidence underpins good practice, policy and management. This year WaterRA has produced 13 project final reports, 6 fact sheets, 34 peer reviewed journal publications and developed an internal Science Quality Framework that underpins the critical assessment of our science outputs. We have also completed the Cyanobacteria impact study, which comprehensively reviews several decades of work in this area and analyses the contribution this has made to our knowledge base, policy and practice. An external peer review and environmental landscape scan was conducted to ensure the currency of the Research Blueprint, which highlighted that this document remains comprehensive and current. The above documents reflect a small subset of the more than 700 publications available for download from our website.

Building capability is fundamental. With approximately half of the water sector's workforce forecast to retire by the end of this decade, it is critical that we support the next generation of water professionals. WaterRA does this by investing in research projects, which maintains the pool of research professionals who supervise the current cohort of higher degree water industry students. Importantly, WaterRA also supports the development of skills in the students involved in our Education Program. This program is 'future-proofing the industry' by training the next generation of water leaders. We are currently supporting 23 Honours and PhD students, and have supported 57 student projects since the commencement of WaterRA.

Collaboration and networking were identified in the Members survey as the most highly valued benefits of engagement with WaterRA. This finding is supported through the collaborative nature of our project activities, with an average of more than 5 organisations represented on each of the more than 86 WaterRA projects on our website. The depth of this engagement is also reflected through our subscriber base with more than 490 individual Member accounts created on our website and more than 1500 individual subscribers on our extended mailing list.

Advocacy is a core WaterRA function to ensure that safe water remains a high priority on the national agenda. WaterRA advocates through written materials, such as our very popular Health Stream publication, the production of more than 90 news articles throughout the year, technical publications and our new and well-read monthly blog. WaterRA also advocates for safe water through participation on key committees, such as the NHMRC's Water Quality Advisory Committee (WQAC), the Australian Water Research and Development Coalition (AWRDC) and the Global Water Research Coalition (GWRC).

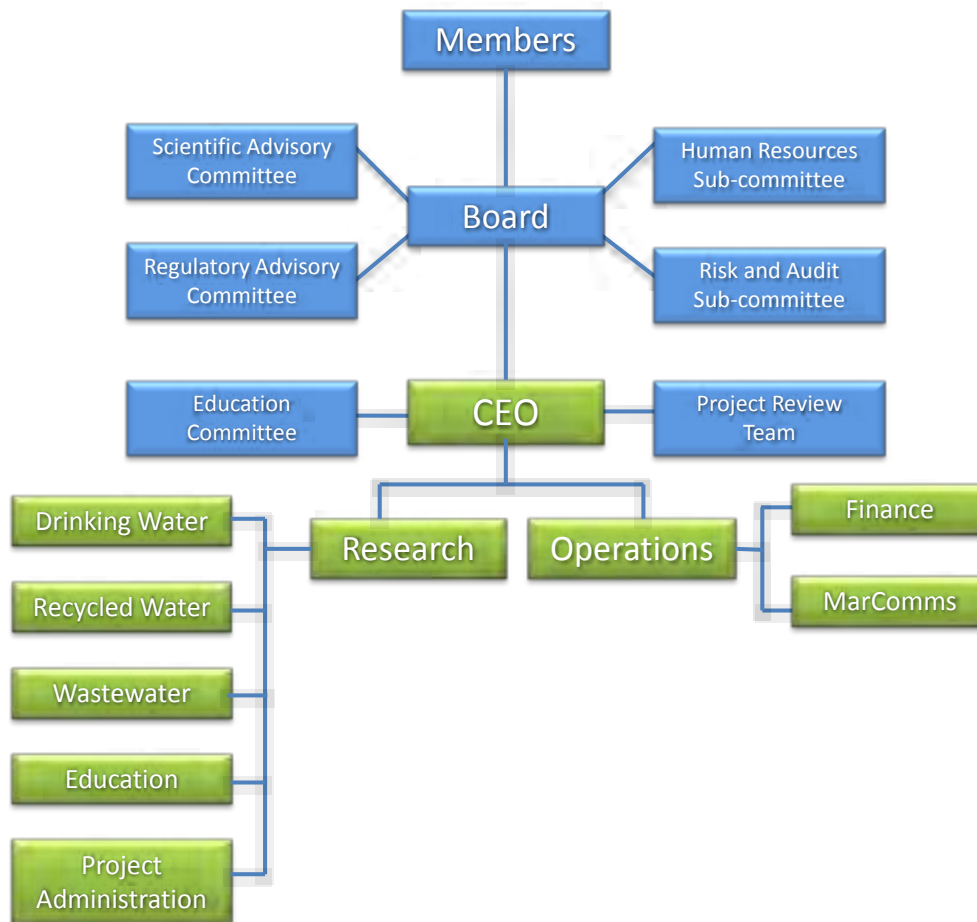
Our new Corporate Strategy 2013-2016 was approved by the Board in June 2013. The focus is now on the implementation of this strategy for the benefit of our Members.

Finally, a low point for this year was the passing of Emeritus Professor Nancy Millis AC. Nancy was an active and passionate supporter of our organisation and our predecessor, the CRC for Water Quality and Treatment. Nancy's memory is honoured through our prestigious Nancy Millis Memorial PhD scholarship, which is awarded each year to our best PhD student, and through the legacy that she has left with all those who knew her.

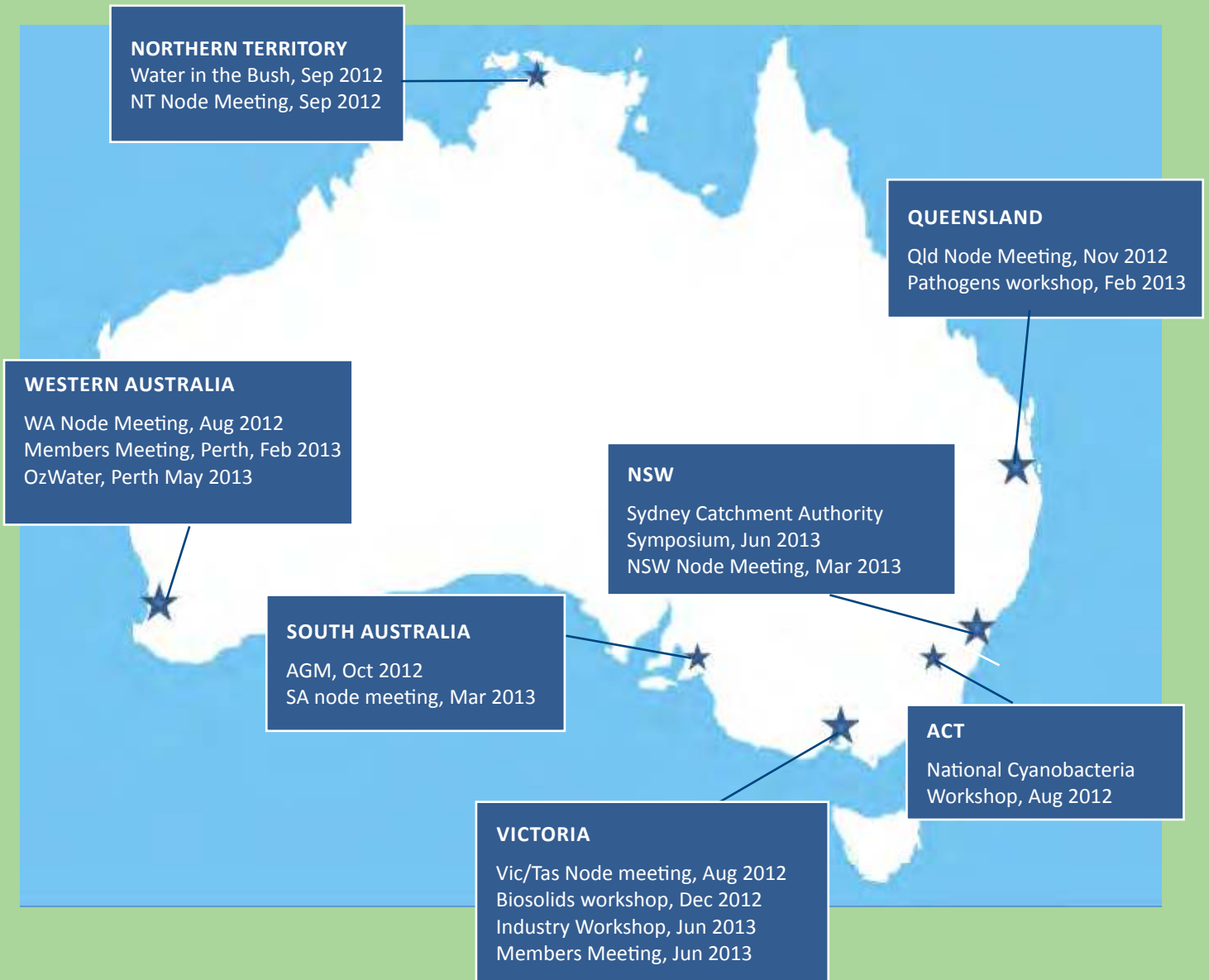
Professor Michael R Moore

Dr David Halliwell

WaterRA STRUCTURE

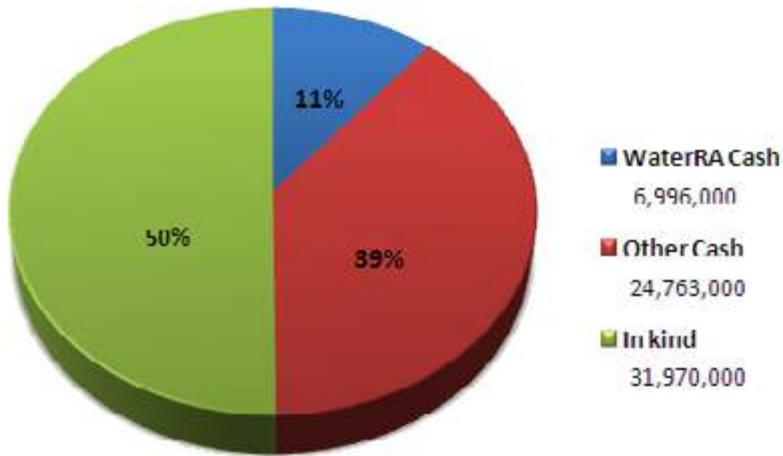


WaterRA ACTIVITY MAP 2012-13

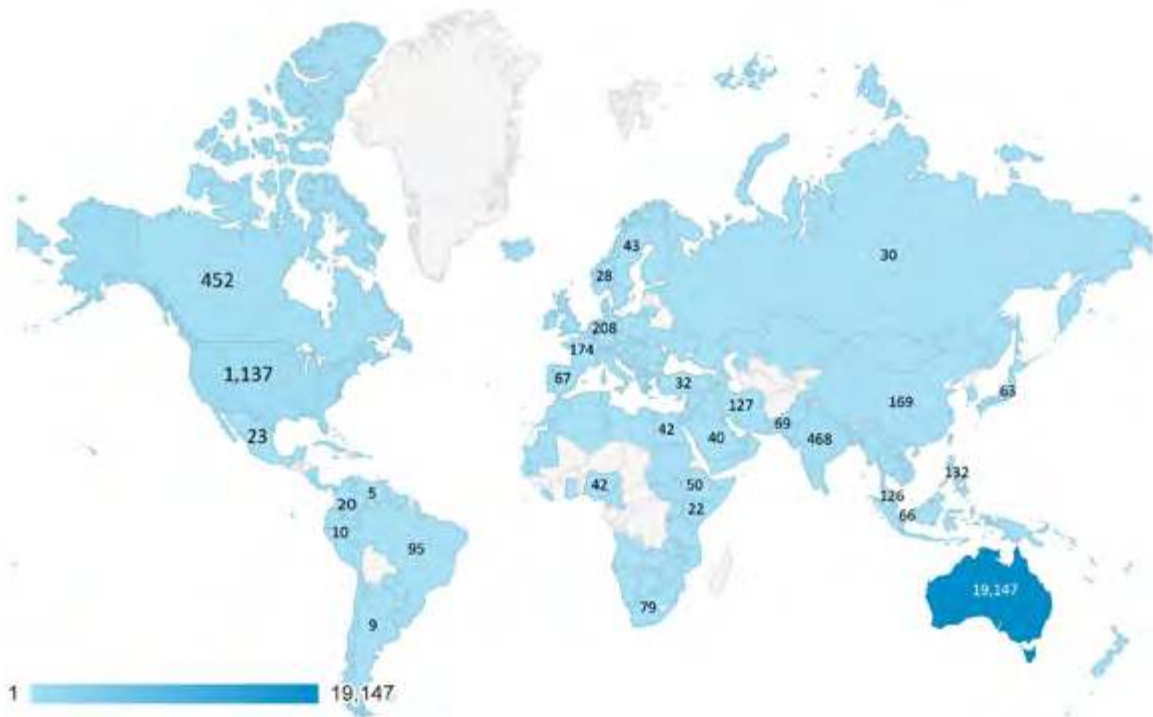


INTERNATIONAL
IWA World Water Congress, Korea - Aug 2012 (Prof Michael R Moore)
GWRC Board Meeting, France - May 2013 (Dr David Halliwell)
IWA Leading Edge Technologies, France - May 2013 (Dr David Halliwell)

RESEARCH FUNDS (\$) 2008 - 2013



LOCATION OF VISITORS TO THE WaterRA WEBSITE



WaterRA BOARD

The WaterRA Board is responsible for the strategic direction and oversight of WaterRA on behalf of the members. It comprises three Directors nominated by research members, four Directors nominated by industry members, an Independent Chairperson and the CEO.



Prof Michael Moore – Independent Chair

Prof Michael Moore was elected as the Independent Chair of WaterRA in July 2008 and again in October 2010 for a further period of three years. Prof Moore's extensive experience has him well-placed to lead WaterRA. He is a registered toxicologist, founding member and Vice-president of the Australasian College of Toxicology and Risk Assessment and a Fellow of the College. He has a PhD in medicine and a Doctor of Science in biochemistry in medicine. He trained in clinical pharmacology at the Royal Postgraduate Medical School and in health management by the NHS Executive. Prof Moore was Director of the National Research Centre for Environmental Toxicology in the University of Queensland, a Foundation Director of the Australian Centres for Human Health Risk Assessment and Director of Queensland Health Scientific Services. He also worked in the University of Glasgow, where he was Reader in Medicine and Therapeutics, contemporaneously being a Director of Monklands and Bellshill Hospitals NHS Trust in Scotland.

He holds the positions of: Honorary Professor, Smart Water Research Centre, Griffith University; Emeritus Professor, University of Queensland; Adjunct Professor, Queensland University of Technology (Research Affiliate in the Centre for Research Excellence in Sun & Health); and Adjunct Professor in the Faculty of Science, Sunshine Coast University. Prof Moore has written several books, numerous book chapters and over 500 refereed research publications. His background in water research goes back to his studies with Strathclyde Water in the 1970's on the origins of lead exposure from water in Glasgow.



Prof Simon Beecham – Non-Executive Director (Research)

Prof Simon Beecham was appointed as a Non-Executive Director in November 2009, and was a member of the original Implementation Committee for WaterRA in the lead-up to its incorporation. Prof Beecham is Head of the School of Natural and Built Environments at the University of South Australia, and is a former Head of Civil Engineering and Director of the Centre for Water Management and Reuse. He is a Fellow of Engineers Australia and a Fellow of the Australian Institute of Company Directors.

Prof Beecham's research interests include water sensitive urban design and the effects of climate change on integrated urban water management. He is also the author of the Syfon software program which has been used to design the roof water harvesting system for Sydney's Stadium Australia and the MCG, as well as the siphonic roof drainage systems at Chek Lap Kok airport in Hong Kong, and the new International Terminal Buildings at Adelaide, Sydney and Kuala Lumpur airports.



Dr David Halliwell - Executive Director

Appointed as Acting CEO for WaterRA on the 6 August 2012 and Executive Director on 3 September 2012, Dr Halliwell worked with WaterRA in various research management roles from its commencement in 2008. Previously Dr Halliwell was a Research Director with the Victorian Department of Primary Industries. Dr Halliwell has significant experience in the administration of research & development; technology transfer and commercialisation; science; finance and business management, and public administration. Dr Halliwell sits on a number of Advisory Boards and Industry Advisory Committees for Curtin University, Monash University, RMIT University and Victoria University. He is a non-executive director for the Membrane Society of Australasia. Dr Halliwell has a BSc (Hons), a PhD in Chemistry, an MBA and is a Graduate of the AICD.

WaterRA BOARD



Dr Melita Stevens – Non-Executive Director (Industry)

Dr Melita Stevens was appointed as a Non-Executive Director in October 2010. She was also a member of the implementation committee that supervised the start-up of WaterRA. Dr Stevens has a background in public health microbiology and has been involved in water quality and research for 20 years. She was involved in the development of hazard analysis critical control point (HACCP) systems for drinking water and recycled water, and has contributed to the WHO Guidelines for Drinking-Water Quality, the Australian Drinking Water Guidelines and the Australian Guidelines for Water Recycling. She is an Adjunct Professor at RMIT and an Honorary Senior Fellow at Melbourne University. Dr Stevens is a former President and Vice-President of the Victorian branch of the Australian Water Association, and was the first winner of the AWA Industry Woman of the Year Award (the Nancy Millis Award). Melita is the Manager of Research and Technology at Melbourne Water.



Mr Keith Cadee – Non-Executive Director (Industry)

Mr Keith Cadee was appointed as a Non-Executive Director in November 2007. He was Chair of the original implementation committee, and was WaterRA's Interim Chair until the appointment of Prof Michael Moore. Mr Cadee has over 30 years' experience in the water industry. He is currently the General Manager of the Acquisition Group for the Water Corporation (Western Australia), where he is responsible for the delivery of Water Corporation's capital works program.

He is Deputy Chair of the National Centre of Excellence in Desalination. Mr Cadee has a Master's degree in environmental engineering, and is a member of the Institute of Engineers Australia, as well as a Graduate of the Australian Institute of Company Directors.



Dr Hamish Reid – Non-Executive Director (Industry)

Dr Hamish Reid was appointed as a Non-Executive Director in October 2010. The General Manager of Strategy at South East Water, he has responsibilities across a broad range of key water industry issues. Dr Reid has worked at South East Water since 2005, working for four years as the Manager of Research and Technology. He has held roles with Melbourne Water, the Victorian Environmental Protection Authority and, in New Zealand, the Institute of Environmental Science and Research, the Ministry for the Environment, and the Environmental Risk Management Authority.

Dr Reid has contributed to working groups for the Australian Guidelines for Water Recycling and is on the Water Quality and Health Committee for the Water Services Association of Australia and the WaterReuse Association's Management Committee. He holds a Bachelor of Science degree, and a PhD in environmental toxicology, and is a Member of the Australian Institute of Company Directors.



Prof Stephen Gray – Non-Executive Director (Research)

Prof Stephen Gray was appointed as a Non-Executive Director in October 2011. Prof Gray is the Director of the Institute for Sustainability and Innovation at Victoria University, where he is responsible for Victoria University's water research program. He leads the CSIRO Cluster on Advanced Membrane Technologies for Water and was previously the leader of the CSIRO Urban Water team and has over 20 years' research experience in water and wastewater treatment.

He was AWA's co-convenor for the Desalination and Membranes Special Interest Network and is an Editor of the IWA journal Desalination and Water Reuse, an Associate Editor of Water Research and on the Editorial Board of Desalination. Prof Gray holds a Bachelor of Engineering (Chemical Engineering) and a doctorate in Chemical Engineering. He is a member of the Australian Water Association, the International Water Association and the Membrane Society of Australasia.

WaterRA BOARD



Mr Ross Young – Non-Executive Director (Industry)

Mr Ross Young was appointed as Non-Executive Director in October 2012. Ross has over 20 years' experience in the urban water industry. He was a senior executive in Melbourne Water for over a decade and was involved in managing all aspects of the urban water cycle. In 2002 Ross was appointed to the position of Executive Director of the Water Services Association of Australia and in this role Ross represented the Australian urban water industry both nationally and internationally. Ross commenced with GHD in May 2011 as Business Leader Water Australia, and in this role he had a particular focus on water utility clients and assisting all the Australia GHD operating centres to understand the changing market place and to assist clients to adapt to the changing contexts and the increasing complexity in which the water industry operates.

Ross departed GHD in September 2012 and was appointed as the Chief Executive of the Sydney Catchment Authority on 2 October 2012. Given that the Sydney Catchment Authority was established to ensure high quality water for Sydney it is important that the Sydney Catchment Authority is involved in the strategic management of water quality.



Dr John Howard – Non-Executive Director (Research)

John has more than 30 years experience in water quality and water resources management, with roles in the UK and South Africa involving water quality research, water and environmental consulting and water quality management. Before joining SA Water, John was Water Quality and Environmental Manager for a South African regional authority responsible for providing water to over 4 million people.

Joining SA Water as Principal Water Quality Scientist in 1998 John was subsequently appointed General Manager of the Australian Water Quality Centre and in August 2005 was appointed Head of Water, Quality and Environment. Recently he was appointed as the General Manager of Strategy & Planning at SA Water which involves responsibilities for Research and Innovation, Asset Management and Corporate Strategy. John is also an SA Water representative on the Allwater Alliance Leadership Team responsible for managing the operation and maintenance of Adelaide's metropolitan water and wastewater systems.

John has played a key role in the establishment of Water Research Australia Limited and is also a Director of the Australian Water Association.

WaterRA BOARD COMMITTEES

The WaterRA Board is supported by two advisory committees – the Scientific Advisory Committee and the Regulatory Advisory Committee, whose role is to provide the Board with strategic and impartial scientific and regulatory advice on WaterRA’s research program, and on emerging issues that should be of concern to the water sector. The advisory committees comprise national and international experts, who are highly regarded in their respective fields.

Scientific Advisory Committee Members: 2012-13

Dr John Howard (Chair)	SA Water Corporation
Prof David Waite (Deputy Chair)	University of New South Wales
Dr Andrew Bath	Water Corporation WA
Prof Ian Falconer	University of Adelaide
Prof Jurg Keller	University of Queensland
Mr Adam Lovell	Water Services Association of Australia
Em Prof Nancy Millis	University of Melbourne
Dr Frans Schulting	Global Water Research Coalition
Mr Mike Chapman	GHD

Regulatory Advisory Committee Members: 2012-13

Mr David Sheehan (Chair)	Department of Health (Victoria)
Dr Paul Byleveld	NSW Department of Health
Dr David Cunliffe	Department of Health (SA)
Ms Sophie Dwyer	Queensland Health
Mr Xavier Schobben	NT Department of Health and Families
Dr Greg Jackson	Queensland Health
Dr Kaye Power	Independent Pricing and Regulatory Tribunal NSW
Dr Heather Uwins	Office of the Water Supply Regulator
Mr Jim Dodds	Department of Health WA
Dr Phil Callan	Independent
Dr Roscoe Taylor	Dept of Health and Human Services, Tasmania

The Board has established two Sub-committees – the Risk & Audit Committee and Human Resources Committee – which provide an important assurance that key areas (Finance, Human Resources and Risk Management) of the Board’s duties will be rigorously discharged.

Risk and Audit Sub-committee Members: 2012-13

Mr Keith Cadee (Chair)	Water Corporation WA
Prof Stephen Gray	Victoria University
Mr Ross Young (from Oct)	Sydney Catchment Authority
Dr Dharma Dharmabalan (Jul - Oct)	Coliban Water

Human Resources Sub-committee Members: 2012-13

Dr Hamish Reid (Chair)	South East Water Corporation
Prof Simon Beecham	University of South Australia
Dr John Howard	Australian Water Quality Centre

MANAGEMENT COMMITTEES

The WaterRA CEO is supported by two operational committees – the Project Review Team and the Education Committee. These committees provide the CEO and staff with advice to ensure the provision of high quality and relevant research. The members of the operational committees are representatives from member organisations who bring a high level of knowledge and skills to WaterRA and its members.

Education Program Committee Members: 2012-13

Prof Felicity Roddick (Chair)	RMIT University
Mr Paul Atherton	Grampians Wimmera Mallee Water
Ms Carolyn Bellamy	WaterRA
A/Prof Mike Burch	SA Water Corporation
Dr Simon Wilson	WaterRA
Dr Rita Henderson	University of NSW
Mr Asoka Jayaratne	Yarra Valley Water
Dr Kathryn Linge / Dr Ina Kristiana	Curtin University
Prof Dennis Mulcahy	University of South Australia
Mr Glen Rowlands	TasWater

Project Review Team

The Project Review Team (PRT) met three times during 2012-13. The PRT provided invaluable support in the review of all WaterRA project proposals, including those for submission to external agencies such as the ARC, Victorian Smart Water Fund, Water Research Foundation, Water Environment Research Foundation and the National Centres of Excellence for Water Recycling and Desalination. The PRT comprises the WaterRA CEO, WaterRA program manager, and a cross-section of industry and research representatives.

Project Review Team Members: 2012-13

Dr David Halliwell	WaterRA
Mr Asoka Jayaratne	Yarra Valley Water
Prof Stuart Khan	University of NSW
Dr Penny Knights	Sydney Catchment Authority
Dr Fred Leusch	Griffith University
Ms Claire McInnes	WaterRA
Mr Con Pelekani	SA Water Corporation
Ms Nadine Reithmuller	Power & Water Corporation NT
Mr Gareth Roeszler	WaterRA
Dr Martha Sinclair	Monash University
Dr Rino Trolio	Water Corporation WA
Dr Simon Wilson	WaterRA

WaterRA TEAM

WaterRA's operations are supported by a small but highly skilled team, enabling the organisation to deliver significant benefits to members and the Australian water community. Details of WaterRA staff during 2012-13 follow.



Ms Jodieann Dawe – CEO and Executive Director (parental leave from Aug 2012)

Jodieann was appointed inaugural CEO and Executive Director of WaterRA in June 2008. Previously, she was the Managing Director of Arc@UNSW; Manager – Research Operations at Meat and Livestock Australia Limited; Business Development Manager for Unisearch Limited; and a Product Development Manager at Varian OSI. She commenced her career at DSTO as a process chemical engineer.

Jodieann's qualifications include a BSc in geology and chemistry, MAppSc in chemistry, MBA, Grad Dip Finance, Securities and Corporate Law, and is a Graduate of the AICD.



Dr David Halliwell – Acting CEO (from August 2012) and Executive Director

David was appointed Acting CEO in August 2012 and Executive Director in September 2012. David's substantive role with WaterRA is General Manager - Research and he has worked with WaterRA in various research management roles from its commencement in 2008. Previously he was a Research Director with the Victorian Department of Primary Industries. David has a PhD in chemistry, an MBA, a BSc (Honours) in chemistry and aquatic biology and is a Graduate of the AICD.



Ms Susan Spragg – Executive Assistant to the CEO

Susan was appointed as Executive Assistant for the CEO of WaterRA in August 2008, having worked at CRC WQT since 1998. Sue is the Assistant Company Secretary and is responsible for a diverse range of administrative and key functions within WaterRA. She is an Certified Member of Chartered Secretaries Australia.



Dr Simon Wilson – Acting General Manager, Research (from August 2012)

Simon is a chemical engineer with more than 15 years' experience in the water industry. Simon's fields of special competence are water treatment, asset management, water quality and risk assessment, and gas adsorption research. Simon has worked as a senior water treatment specialist at Melbourne Water, and in academic research positions at Monash University and Victoria University, and with private consultants CMPS&F, Arris and Aurecon. Prior to his role with WaterRA, Simon was a self-employed contractor/consultant for a number of water authorities in Victoria.



Peter Brass – General Manager, Operations and Company Secretary

Peter was previously General Manager, Risk Management & Audit at Primary Industries and Regions SA (PIRSA). He has over 20 years' experience in risk management and internal audit in both private and public organisations. Peter has been a Director for the Risk Management Institution of Australasia Limited, and received the 2003 ARIMA Risk Manager of the Year award for the development and successful implementation of the PIRRISK system at PIRSA. He sits as an independent member on a number of local government audit committees within South Australia. Peter has a BEc (UofA), Grad Dip Management (UNSW), is a Certified Practising Risk Manager, Fellow of CPA Australia and a Graduate of the AICD. Peter also presents training courses on behalf of the Chartered Secretaries Australia on topics related to governance and risk management.

WaterRA TEAM



Ms Angela Gackle – Marketing & Communications Manager (from May 2013)

Angela took up the position of Marketing and Communications Manager at WaterRA in May 2013. She has a Bachelor of Science in Zoology/Pharmacology. Angela was previously the Manager of MarComms in the CRC WQT and subsequently WaterRA. She worked in Communications in CSIRO for 13 years, and prior to that in local government, and as a contractor in a number of sectors.



Ms Carolyn Bellamy – Education Program Coordinator

Carolyn is the Education Program Coordinator at WaterRA, a role she has held since March 2009. She administers the education initiatives targeted towards supporting industry and research members develop young water professionals for the future. Before joining WaterRA, Ms Bellamy was a key coordinator of the CRC WQT Education and Training Program.



Mr Gareth Roeszler – Program Manager, Research

Gareth is the Program Manager - Research at WaterRA. Gareth started with WaterRA in March 2010 and has worked in the Research Team in several roles. Gareth has a Bachelor of Engineering (Chemical), a Bachelor of Laws (Honours) and a Graduate Diploma in Legal Practice. Prior to joining WaterRA Gareth worked for BHP Billiton at Olympic Dam in SA.



Ms Claire McInnes - Program Administrator (from September 2012)

Claire is a project management professional with a Bachelor of Engineering and a Graduate Certificate in Project Management. She has extensive experience in Project Management, Configuration and Engineering Management – particularly in the implementation of business processes and IT solutions to support these practices. Recent roles include project co-ordinator with Barker Wentworth Adelaide, Sales Manager with DPA Solar, project manager with the APA group, project engineer with Australian Aerospace and with Boeing Australia in Seattle. Claire is a member of the Australian Institute of Project Management.



Mr Fred Fleuren – Senior Finance Officer

Fred is the Senior Finance Officer, and manages the financial and management accounts for WaterRA. He joined WaterRA in October 2008, having worked at CRC WQT since 2003. Fred is a member of the Association of Accounting Technicians and is studying towards a dual certification in Accounting and Bookkeeping.

Other staff changes during the year:

Ms Eva O’Driscoll (Manager Marketing and Communications) July 2012

Mr Vince Mazzone (Corporate Services manager) July 2012 - November 2012

Ms Tracie Sanim (Manager Marketing and Communications) October 2012 - May 2013

WATER RESEARCH AUSTRALIA LIMITED

FINANCIAL SUMMARY FOR THE YEAR ENDED 30 JUNE 2013

- >> Directors' Report
- >> Auditor's Independence Declaration
- >> Corporate Financial Report
- >> Directors' Declaration
- >> Independent Auditor's Report

DIRECTORS' REPORT

The Board of Directors of Water Research Australia Limited has pleasure in presenting this report for the financial year ended 30 June 2013 to the members of Water Research Australia Limited.

The Board

The Board of Water Research Australia Limited is a representative Board comprising nine Directors:

- An Independent Non-Executive Chair
- Four Non-Executive Directors nominated by industry members and elected by members
- Three Non-Executive Directors nominated by research members and elected by members
- The CEO

The Chair is a paid position elected for a term of three years, while other non-executive Directors serve terms of two years in a voluntary capacity.

The Chair, Professor Michael Moore, was first appointed 11 July 2008 at a general meeting of members and re-appointed on 26 October 2010, following a resolution of the members at the 2010 annual general meeting.

WaterRA Committees

The Board established a Scientific Advisory Board Committee and a Regulatory Advisory Board Committee. The advisory committees have no formal decision-making powers but provide expert advice to assist the Board and management in developing, conducting and evaluating the research program of Water Research Australia.

The Board also established two sub-committees – the Risk and Audit Committee and Human Resources Committee – which provide an important assurance that key areas (Finance, Human Resources and Risk Management) of the Board's duties will be rigorously discharged.

In addition to the two advisory Board committees and sub-committees of the Board, two management committees – the Project Review Team and the Education Committee – provide advice and support to the CEO and staff and make recommendations to the Board on specific program issues.

Directors

The names and details of the company's Directors in office during the financial year are as outlined on the following page. All Directors were in office for the entire year unless otherwise stated.

More detailed biographies for Directors can be found on pages 14-16.

DIRECTORS' REPORT

During the 2012-13 financial year the Board met on ten occasions for Board meetings or Non-Executive Director meetings - either face-to-face or via teleconference. In addition Directors also met on four occasions for the Board sub-committees, either face-to-face or via teleconference.

Name	Date of Appointment	Term End or Retirement Date	Board Meetings			Non-Executive			Board Sub-committee	
			A	B	C	D	E	F	RAAC	HR
Prof Simon Beecham	27 Nov 2009	2013 AGM	7	4	3	3	2	1	n/a	2
Mr Keith Cadee	12 Oct 2007	2013 AGM	7	6	1	3	2	1	2	n/a
Ms Jodieann Dawe	3 Jun 2008	Aug 2012	1	1	n/a	n/a	n/a	n/a	n/a	n/a
Dr Dharma Dharmabalan	26 Mar 2008	18 Oct 2012	3	3	0	2	2	0	n/a	n/a
Prof Stephen Gray	28 Oct 2011	2013 AGM	7	7	0	3	3	0	2	n/a
Dr David Halliwell	6 Sept 2012	ongoing	5	5	0	n/a	n/a	n/a	n/a	n/a
Dr John Howard	12 Oct 2007	2013 AGM	7	5	2	3	3	0	n/a	2
Prof Michael Moore	11 Jul 2008	2013 AGM	7	7	0	3	3	0	n/a	n/a
Dr Hamish Reid	26 Oct 2010	2014 AGM	7	7	0	3	3	0	n/a	n/a
Dr Melita Stevens	26 Oct 2010	2014 AGM	9	8	1	2	1	1	n/a	n/a
Mr Ross Young	18 Oct 2012	2014 AGM	4	3	1	1	1	0	2	n/a

- A Number of meetings held during the time the Director held office during the year
- B Number of meetings attended
- C Number of apologies registered
- D Non-executive meetings held
- E Non-executive meetings attended
- F Number of apologies registered

DIRECTORS' REPORT

Details of Directors' qualifications, experience and special responsibilities

Name	Qualifications/ Professional Memberships	Position and Organisation	Special Responsibilities
Prof Simon Beecham	BSc (Hons) (Civil Eng), PhD (Civil Eng), GCHE FAICD, FIEAust, CPEng, SIA, AWA	Head of School, Natural & Built Environment, University of South Australia	Member of Human Resources Committee (Board sub-committee)
Mr Keith Cadee	BEng (Civil), MEng (Environmental) MIE(Aust), GAICD	General Manager, Acquisition Group, Water Corporation (up to 30 June 2013)	Chair: Risk & Audit Committee (Board sub-committee)
Ms Jodieann Dawe	BSc (Hons), MAppSc (Colloid Chemistry), MBA, GradDipFinSecCorplaw GAICD, AFAIM, MRACI, CChem, IWA, AWA (Director)	CEO, Water Research Australia (previously WQRA)	
Dr Dharmia Dharmabalan	D Tech, DipH Delft, GradDip (Comp), BScEng (Civil) (Hons), MEng (Env), Adjunct Prof (VU), Adjunct A/Prof (Deakin) WE, FIE (Aust), CPEng, FICE, FASCE, MIWEM, MAWA	General Manager, Planning and Infrastructure, Coliban Regional Water Corporation	
Prof Stephen Gray	BE (Chem Eng), PhD (Chem Eng)	Director, Institute of Sustainability, and Innovation, Victoria University	Member of Risk & Audit Committee (Board sub-committee)
Dr David Halliwell	BSc (Hons), MBA, PhD, GAICD	Acting CEO Water Research Australia (previously WQRA)	
Dr John Howard	BSc (Hons), PhD (Freshwater Chemistry) FAICD, AWA (Director)	General Manager, Strategy & Planning, SA Water Corporation	Chair: Scientific Advisory Committee Member of Human Resources Committee (Board sub-committee)
Prof Michael R Moore	BSc (Hons), PhD (Medicine), DSc (Biochemistry in Medicine) MACM, FACTRA AWA, ACTRA, Biochem. Soc. BTS, IWA,	Independent	Independent Chair: WaterRA Board
Dr Hamish Reid	BSc (Hons), PhD MAICD, AWA	General Manager Strategy, South East Water Limited	Chair: Human Resources Committee (Board sub-committee)
Dr Melita Stevens	BAppSc, DipMicro, PhD, Adjunct Prof (RMIT), Senior Fellow (Melbourne) AWA	Manager Research & Technology, Melbourne Water Corporation	
Mr Ross Young	Grad Dip (Natural Resources Law), MBA, BAppSc (Env Assessment Land Use Policy)	CEO Sydney Catchment Authority	Member of Risk & Audit Committee (Board sub-committee)

DIRECTORS' REPORT

Company Secretary

Ms Jodieann Dawe was the Company Secretary until 3 August 2012.
Mr Peter Brass has been the Company Secretary since 3 August 2012.

Principal Activities

Water Research Australia's principal activities during 2012-13 were:

- Co-ordinating and managing high quality research on priority issues in water quality on behalf of the members of Water Research Australia and the Australian water community
- Facilitating knowledge transfer and uptake of outcomes of R&D into industry through workshops and members' meetings
- Providing scientific evidence to underpin regulation and guidelines relating to safe drinking water and recycled water
- Promote the importance on the national agenda of safe water to the Australian community by engaging with key decisions makers within government and industry

Operating Results for the Period

The company's trading result for the year ended 30 June 2013 was a deficit of (\$361,994) [2012 deficit of (\$719,028)].

The surplus/(deficit) for Water Research Australia as a whole can be considered as having two components:

PART A - A deficit of (\$1,141,367) for the 2012-13 year from revenue and expenditure acquitting commitments to research projects [2012 deficit of (\$1,514,132)] from cash reserves.

PART B - A surplus of \$779,373 for the 2012-13 year from the remainder of the income statement not related to acquitting commitments to research project expenditure [2012 surplus of \$795,104].

The overall deficit is a reflection of research projects utilising the cash committed to them.

The company is a not-for-profit entity and is exempt from income tax.

Cash & Project Commitments

At 30 June 2013 the company had cash at hand of \$3,242,054 [2012 \$3,577,696]. At the same date Water Research Australia commitments to research projects plus external project funding held or received by Water Research Australia was \$1,109,177 [2012 \$2,735,401].

The cash commitments will be acquitted over the term of the research projects, with each project averaging a span of two to three years.

The Water Research Australia Board closely monitors its commitments to research projects relative to cash and working capital to assure that Water Research Australia's cash commitments to projects can be covered in full from the point of Board approval.

Members Liability on Winding Up

Each member of the company undertakes to contribute to the company's property an amount as may be required not exceeding one hundred dollars if the company is wound up while it is a member or within one (1) year after ceasing to be a member, for payment of the company's debts and liabilities contracted before it ceased to be a member and of the costs, charges and expenses of winding up and for an adjustment of the rights of contributories amongst themselves.

DIRECTORS' REPORT

Dividends

No dividends were paid during the reporting period. The company is limited by guarantee and its constitution precludes the payment of dividends.

Share Options

The company has not granted options to any persons to have shares issued to them.

Significant Changes in State of Affairs

In the opinion of the Directors there were no significant changes in the state of affairs of the company that occurred during the financial year under review not otherwise disclosed in this report.

After Balance Date Events

There has not arisen in the interval between the end of the financial year and the date of this financial report any item, transaction or event of a material and unusual nature that in the opinion of the Directors is likely to substantially affect the operations of the company, the results of those operations, or the company's state of affairs in future financial years.

Environmental Regulations

The company is not particularly exposed of any environmental regulation. The Directors have not received notification nor are they aware of any breaches of environmental laws by the company.

Future Developments and Results

There are no significant changes in the state of affairs that are expected in the future which will affect the results and therefore require disclosure.

Indemnification and Insurance of Directors and Officers

Since the end of the previous financial year, the company has paid an insurance premium of \$10,139 in respect of a directors and officers liability insurance contract for current and former directors and officers, against all liabilities and expenses arising as a result of work performed in their respective capacities, to the extent permitted by law.

Auditors Independence

The auditors independence declaration which forms part of the Directors reports for the financial year ended 30 June 2013 has been received and can be found following this report.

Signed in accordance with a resolution of the Directors.



Keith Cadee
(Director)

9 August 2013



Stephen Gray
(Director)

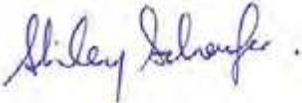
AUDITORS INDEPENDENCE DECLARATION

**AUDITOR'S INDEPENDENCE DECLARATION
UNDER SECTION 307C OF THE CORPORATIONS ACT 2001**

TO THE DIRECTORS OF WATER QUALITY RESEARCH AUSTRALIA LIMITED

As lead auditor for the audit of Water Quality Research Australia Limited for the year ended 30 June 2013, I declare that, to the best of my knowledge and belief, there have been no contraventions of:

- (i) the auditor independence requirements of the *Corporations Act 2001* in relation to the audit; and
- (b) any applicable code of professional conduct in relation to the audit.



Shirley Schaefer
BDO (SA)

09-August-2013
Adelaide

STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

AS AT 30 JUNE 2013	2013 \$	2012 \$
REVENUE		
Revenue from continuing operations	2,948,886	3,555,708
Other income	271	-
EXPENDITURE		
Research programs	(1,560,764)	(2,535,891)
Education programs	(210,645)	(235,917)
Marketing and communications	(101,082)	(127,151)
Operating expenses	(332,050)	(318,812)
Depreciation and amortisation expense	(13,842)	(40)
Employee benefits	(1,060,068)	(1,024,225)
Chairman remuneration	(32,700)	(32,700)
Surplus/(Deficit for the year)	(361,994)	(719,028)

Copies of the full set of financial statements are available on request

STATEMENT OF FINANCIAL POSITION

AS AT 30 JUNE 2013	2013	2012
	\$	\$
ASSETS		
Current assets		
Cash and cash equivalents	3,242,054	3,577,696
Trade and other receivables	192,301	292,408
Other assets	76,261	31,981
Total current assets	<u>3,510,616</u>	<u>3,902,085</u>
Non-current assets		
Property, plant and equipment	-	-
Intangible asset - software	55,370	64,212
Total non-current assets	<u>55,370</u>	<u>64,212</u>
Total assets	<u>3,565,986</u>	<u>3,966,297</u>
LIABILITIES		
Current liabilities		
Trade and other payables	375,851	432,359
Revenue received in advance	1,005,011	986,822
Total current liabilities	<u>1,380,862</u>	<u>1,419,181</u>
Non-current liabilities		
Total non-current liabilities	-	-
Total liabilities	<u>1,380,862</u>	<u>1,419,181</u>
Net assets	<u>2,185,124</u>	<u>2,547,116</u>
EQUITY		
Retained earnings	2,185,124	2,547,116
Total equity	<u>2,185,124</u>	<u>2,547,116</u>

Copies of the full set of financial statements are available on request

DIRECTORS' DECLARATION

WATER RESEARCH AUSTRALIA LIMITED
A.B.N. 32 127 974 261
DIRECTORS' DECLARATION
(SHORT DISCLOSURE)

The Directors of the company declare that:

In the opinion of the Directors of Water Research Australia Limited:

1. the Statement of Profit or Loss and Other Comprehensive Income as extracted from the full Financial Report of the company are drawn up so as to present fairly the results of the operations of the company for the financial year ended 30 June 2013 and the state of affairs of the company as at 30 June 2013.
2. there are reasonable grounds to believe that the company will be able to pay its debts as and when they become due and payable.

This declaration is made in accordance with a resolution of the Board of Directors.

On behalf of the Board of Water Research Australia Limited.



Keith Cadee
(Director)



Stephen Gray
(Director)

Dated this 9th day of August 2013

INDEPENDENT AUDIT REPORT TO THE MEMBERS OF WATER RESEARCH AUSTRALIA LIMITED

Report on the Financial Summary

The accompanying financial summary of Water Research Australia Limited comprises the statement of financial position as at 30 June 2013 and the statement of profit or loss and other comprehensive income for the year then ended, derived from the audited financial report of Water Research Australia Limited for the year ended 30 June 2013. The financial summary does not contain all the disclosures required by the Australian Accounting Standards.

Directors' Responsibility for the Financial Report

The directors of the company are responsible for the preparation of the financial report that gives a true and fair view in accordance with Australian Accounting Standards - Reduced Disclosure Requirements and the *Corporations Act 2001* and for such internal control as the directors determine is necessary to enable the preparation of the financial report that gives a true and fair view and is free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on the financial summary based on our audit procedures. We conducted an independent audit of the full financial report of Water Research Australia Limited for the year ended 30 June 2013. Our audit report on the full financial report was signed on 28 August 2013, and was not subject to any modification. The Auditing Standards require that we comply with relevant ethical requirements relating to audit engagements and plan and perform the audit to obtain reasonable assurance whether the financial report is free from material misstatement.

Our procedures in respect of the financial summary included testing that the information in the financial summary is consistent with the full financial report, and examination on a test basis, of evidence supporting the amounts, discussion and analysis, and other disclosure which were not directly derived from the full financial report. These procedures have been undertaken to form an opinion whether, in all material respects, the financial summary is presented fairly.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

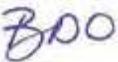
Independence

In conducting our audit, we have complied with the independence requirements of the *Corporations Act 2001*. We confirm that the independence declaration required by the *Corporations Act 2001*, which has been given to the directors of Water Research Australia Limited, would be in the same terms if given to the directors as at the time of this auditor's report.

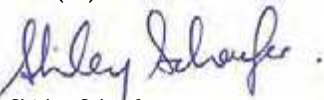
Opinion

In our opinion the financial report of Water Research Australia Limited is in accordance with the *Corporations Act 2001*, including:

- (a) Giving a true and fair view of the company's financial position as at 30 June 2013 and of its performance for the year ended on that date
- (b) Complying with Australian Accounting Standards and the *Corporations Regulations 2001*.



BDO (SA)



Shirley Schaefer
Partner

Adelaide, 4 September 2013

WaterRA PUBLICATIONS 2008 - 13

Journal Papers - Refereed

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WaterRA (2012c) Health risks of greywater use

WaterRA (2012d) Manganese in drinking water

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WaterRA (2012f) Water treatment and disinfection by-product formation

WaterRA (2013a) Capacitive deionisation (CDI)

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WaterRA (2013c) Health based targets - Introduction

WaterRA (2013d) Health based targets - Viewpoints

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INDUSTRY MEMBERS

Australian Water Association Ltd
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