



# iah news

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Newsletter of the Australian Chapter  
International Association of Hydrogeologists

**July to September 2015**  
**Volume 31, No. 3**



On the cover:

***Water quality sampling on the Liverpool Plains, NSW, by  
University of NSW (funded through NCGRT).***

Photograph by Wendy Timms.

In this issue:

- ***Update on IAH Membership***
- ***News from the President***
- ***Membership Update***
- ***IAH Australia Executive***
- ***Finance Update***
- ***Early Career Hydrogeologists Network***
- ***Feature News***
- ***State Branch Activity***
- ***National Conferences, Events and Resources***

## International Association of Hydrogeologists Australian National Chapter

The International Association of Hydrogeologists is a professional association for those within disciplines related to groundwater, its occurrence, utilisation, testing and management. IAH is a scientific and educational organisation that is truly international, and was established to foster closer ties, cooperation and information exchange related to the study of groundwater. IAH is non-government and non-profit and has over 4000 members internationally from around 120 countries. The Association is affiliated with the International Union of Geological Sciences (IUGS), and was founded during the 20<sup>th</sup> International Geological Congress in 1956. By its statutes the IAH is an association of individuals and corporate members, and not a federation of national committees. National groups do, however, organise local meetings and other activities. A proportion of the national committee membership goes to the local organisation to support these activities, the remainder to the international body. The country of the international secretariat is changed every several years. The IAH publishes Hydrogeology Journal, various workshop and conference proceedings and an international newsletter.

The main objectives of the IAH are to promote international and national cooperation between involved scientists and engineers; sponsor international and national technical/management meetings and symposia on hydrogeology; publish hydrogeological reports, papers and maps; establish investigation commissions and working groups to report on special topics; encourage the international application of relevant approaches and techniques for the benefit of the hydrological and human environment.

Our national chapter was founded in 1983 and is one of the most active. Activities tend to be organised locally within each state and territory, but national activities also occur. Each state body has its own meetings, usually monthly. Conferences are held in Australia around every two to three years, and seminars on a more frequent basis.

Membership Requirements: IAH will accept as individual members anyone directly or indirectly engaged in study or research on, or management of water in its various forms related to hydrogeology, if sponsored by two members in good standing. Companies and research organisations can apply for corporate membership. The current membership categories and annual subscriptions for 2015 (see [www.iah.org.au](http://www.iah.org.au)) are:

▪ Member	\$140
▪ Online member	\$120
▪ Student	\$55 (full time students)
▪ Online Student Member	\$35
▪ Corporate member	\$790
▪ Partial sponsor	\$155
▪ Full sponsor	\$190
▪ Retired	\$75

We are pleased to announce that the student membership fees have been reduced by \$20 in 2015 as an added incentive for full-time students to become IAH members. In addition, we have maintained the Member and Online Member fees at their current level, despite a rise in the IAH International fees for these membership categories for 2015.

Membership of this professional association is tax deductible in Australia, and individual members are entitled to use 'MIAH' (Member of the International Association of Hydrogeologists) after their name.

## FROM THE PRESIDENT

Welcome to the IAH Newsletter!

It was great to see a strong contingent of Australian IAH members among the 800 delegates at the recent IAH international Congress in Rome. The congress was a great opportunity to present the exciting groundwater work being undertaken in Australia. It was also an important opportunity to link in to the many problems, approaches and solutions to the world's groundwater resources. With the theme of "Back to the Future", it also provided an opportunity to reflect on the role of groundwater throughout human history. Rome has so many links, particularly through the Roman period of the importance of groundwater, and the amazing engineering that utilised it.

The international annual general meeting of IAH highlighted the strong links we, as an organisation have with international groups such as UNESCO and the United Nations Food and Agriculture program. There are also a range of international Commissions and Networks. I encourage you to access the [www.IAH.org](http://www.IAH.org) website to learn more. In addition, there are position papers being developed on "Food security and Groundwater" and "Energy and Groundwater". The IAH has clearly identified the need to speak clearly on key global issues where groundwater has a pivotal role. There are opportunities for IAH Australia to build off these key position papers and provide our own local position. There is a growing opportunity to build the capacity for IAH Australia to advocate for good groundwater governance and management.

I look forward to seeing many of you at the upcoming Australian Groundwater Conference in Canberra. The conference provides a great opportunity for us, as a profession, to come together and share knowledge, ideas and a vision for our industry in Australia.

Regards,

Chris McAuley

President, IAH Australia

## NATIONAL CORPORATE SPONSORS

We gratefully acknowledge the support of our national corporate sponsors.



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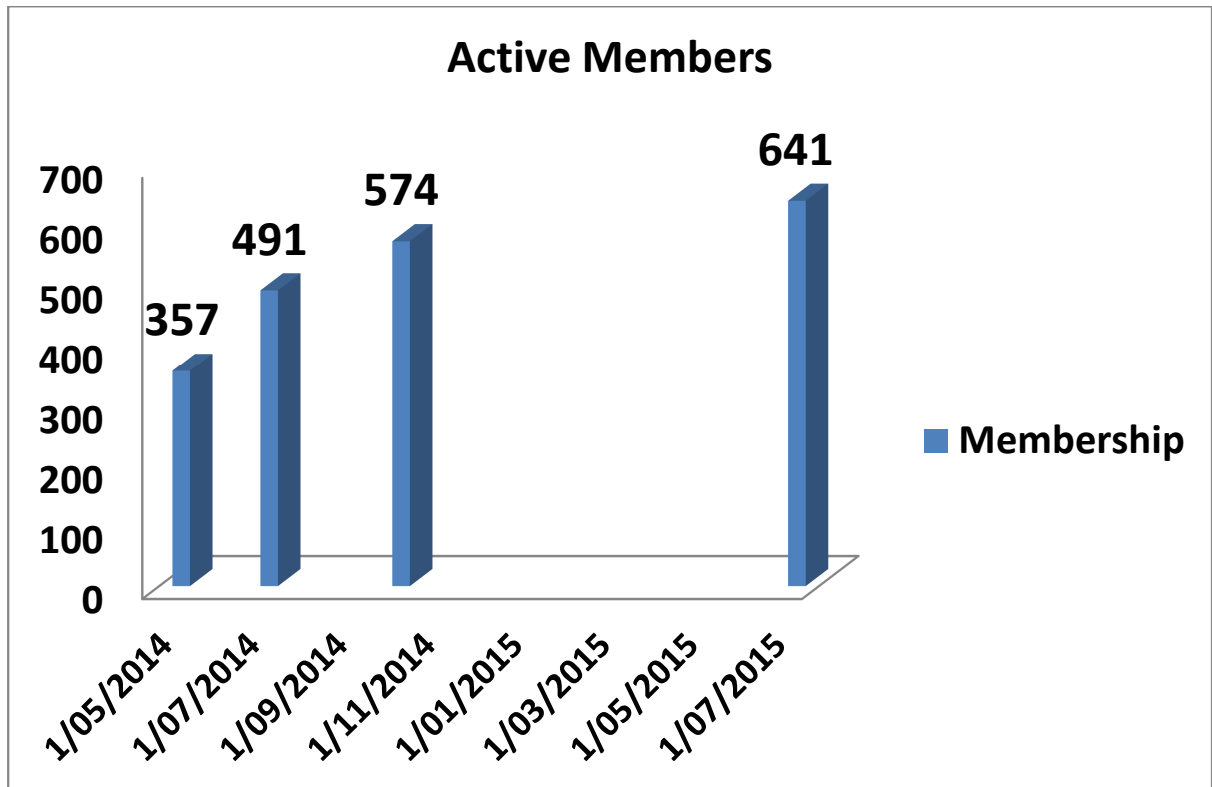
[www.jbsg.com.au](http://www.jbsg.com.au)



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## MEMBERSHIP

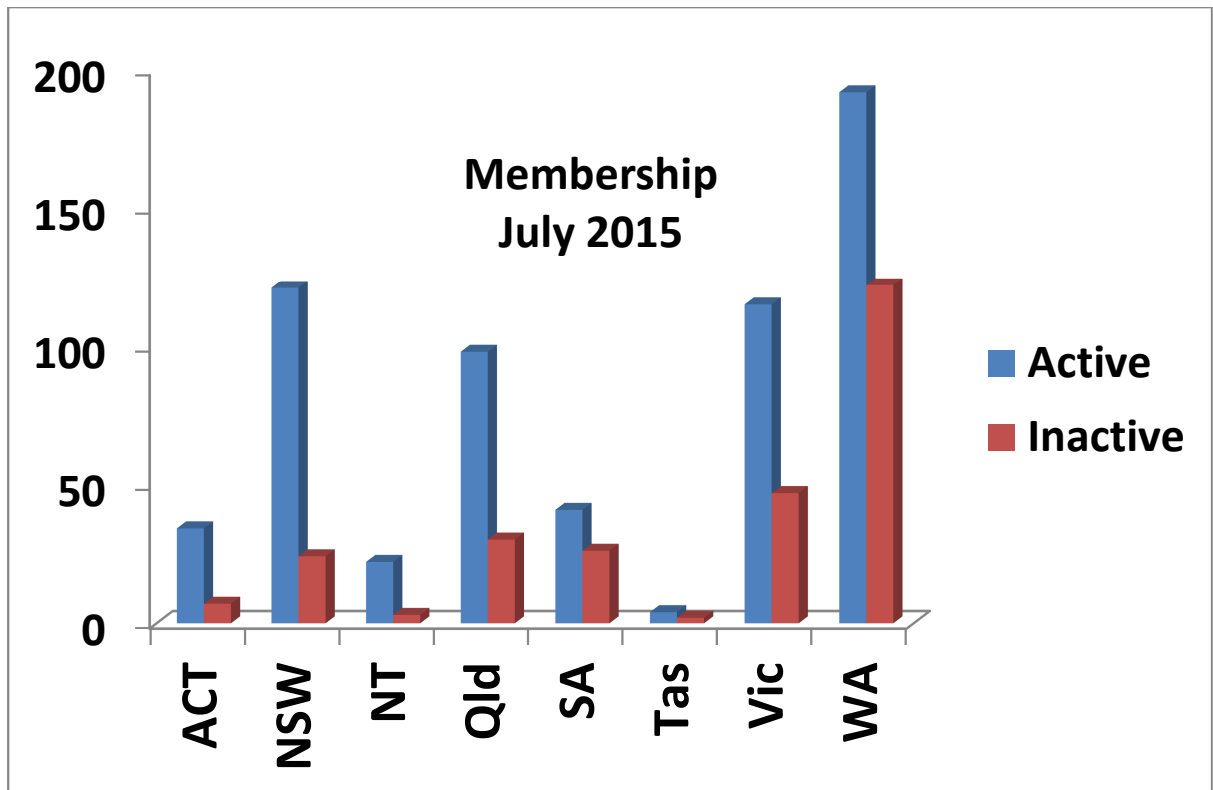
The encouraging trend in the number of active (paid up) members since the low point of May 2014, noted in the previous edition of the newsletter, appears to be continuing. The graphical depiction of member numbers since May 2014 indicates that we are gradually regaining the levels of 700 plus members of earlier years.



The development of the new on-line systems for managing membership and the redesigned website with user-friendly navigation and payment facilities have certainly contributed to the trend. There were 637 active members and 261 inactive (non-financial) members at the end of July 2015 – a turnaround from the previous year when the ratio was the opposite. The table of active and inactive members and the membership graph show the distribution of the numbers by State and Territory

### Membership by State and Territory

Members	QLD	NSW	VIC	TAS	SA	WA	NT	ACT
<i>Active</i>	98	121	115	4	41	192	22	34
<i>Inactive</i>	30	24	47	2	26	122	3	7



We eagerly await any information from the worldwide IAH membership survey earlier this year. Some of our members took part in that on-line survey and it will be interesting to see what Australian members think about the issues surveyed. We hope to be able to report on the results in the next newsletter. Stay tuned!

Any inquiries regarding the new membership system can be sent to [membership@iah.org.au](mailto:membership@iah.org.au).



## **Current/Lapsed Membership Renewal Process**

Membership renewal emails were sent to all members in January, with instructions for membership renewal using the new system. For anyone who may have missed the email, the renewal instructions from the email are provided on the following page.

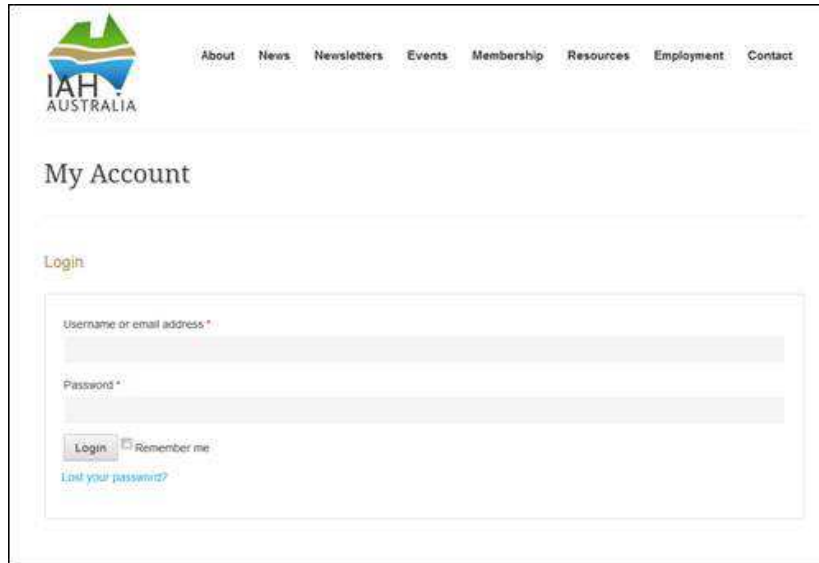
Note that if you were a member in 2014, and **did not receive** a membership renewal email in January 2015, some common issues are listed below:

- The email was intercepted by your **spam filter**. Check your spam folder or quarantine archive for IAH emails received on or about 15 January 2015, and consider adding the IAH sender details to your safe list.
- Your **email details changed** in the past year (for example, change of employment) and you have not yet updated your email address with IAH. You can update your details at any time through the [iah.org.au](http://iah.org.au) website, by selecting “My Account” under “Membership”, and editing account details.
- **Corporate “firewalls”** at some companies block all suspected incoming spam emails (IAH emails may be classified as “marketing” emails by some systems). Speak with your IT administrator about adding IAH to your corporate safe list, or switch to a personal email account.
- Your membership has **lapsed for more than a year** without renewal, and your details have been removed from our database. You can still use the new membership system to renew your lapsed membership.

Contact [membership@iah.org.au](mailto:membership@iah.org.au) with any questions.

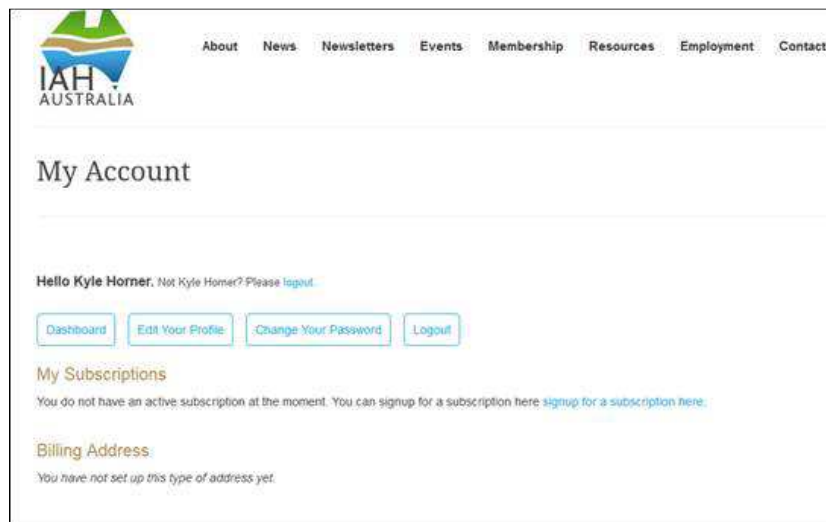
Log into your account page on the IAH website (<https://www.iah.org.au/membership/my-account/>).

**Your username is the email address the email was sent to (which should be the email address you have registered with IAH).** If you have forgotten your password, you can reset it using the “**Lost Your Password**” link at the bottom of the page **using the email address the email was sent to.**



Once logged in, you will see your account Dashboard.

Under the **My Memberships** section, click on the link to sign up for a new subscription. This will direct you to a new page where you can select your desired membership category from the options. Details of each membership type can be found at the bottom of the registration page. Once you have chosen your desired category, follow the prompts to finish your membership renewal.



If you have any questions, please do not hesitate to contact the membership team at [membership@iah.org.au](mailto:membership@iah.org.au).

## IAH AUSTRALIA EXECUTIVE

<b>President</b>	Chris McAuley	Chris.McAuley@delwp.vic.gov.au
<b>Vice-President</b>	Dr Lange Jorstad	ljorstad@geosyntec.com
<b>Treasurer</b>	Ron Colman	Ron.Colman@royhill.com.au
<b>Secretary</b>	Dr Kyle Horner	Kyle.Horner@epa.nsw.gov.au
<b>Past President</b>	Dr Rick Evans	Richard.Evans2@jacobs.com
<b>Membership Secretary and Web Administration</b>	Fiona Adamson	secretariat@iah.org.au
<b>Newsletter Champion</b>	Dr Ben Rotter	Ben.Rotter@coffey.com

### ***Introducing Committee Members***

In this issue we introduce Dr Lange Jorstad, IAH National Vice President.



Lange is a Senior Hydrogeologist with Geosyntec Consultants in Sydney, with 18 years' experience in the fields of physical and contaminant hydrogeology. Lange is originally from California, where he earned his BSc in Geological Sciences from the University of California, Santa Barbara, and spent the first three years of his career with a consultancy in San Francisco. He migrated to Australia with his future wife in 2000 as a PhD student at the University of New South Wales, where his research focused on hydrogeochemical processes in landfill leachate. Lange took a consulting role with ERM in 2003, moved to Golder in 2007, and most recently joined Geosyntec in 2014 to help

establish its Australian operations. In between, he got married, became a father, became an Australian Citizen, and completed his doctorate (in that order).

Lange's original involvement with IAH committee roles was with the NSW branch from 2006 to 2009, as a Communications Officer the first year and Committee Chair thereafter. It was an interesting time for the NSW committee, as it was transitioning from being managed by the "old guard" to the next generation of groundwater professionals. During that time the NSW committee worked hard to increase meeting attendance (which now averages 20-30+ per meeting), increase the activity of the NSW branch in general, and help foster interest in the IAH with the younger generation of hydrogeologists coming up through the ranks.

Lange was elected to the position of Secretary on the National Committee in 2009, and Vice President in 2013. In his National Committee role, Lange helps to deliver on the IAH aims of promoting collaboration, advocacy and raising the profile of the groundwater industry across Australia.

Outside of work and the IAH, most of Lange's energy goes into raising three lovely but strong-willed kids, he tries (poorly) to maintain a semblance of work-life balance, and dreams of skiing, camping, bushwalking, mountain biking and visiting new places (and occasionally actually does those things!).

## **FINANCE UPDATE**

IAH National Committee finances are summarised in the table below.

Term Deposit No.1 as of 21/10/2015	\$46,322.93
Term Deposit No.2 as of 21/10/2015	\$50,000.00
Cash Account as of 21/10/2015	\$49,946.35
<b>Total Cash Balance as of 21/10/2015</b>	<b>\$146,269.28</b>

Major near future Outgoings include:

- UK IAH Head Office 2015 subscription \$71,012.89 (low exchange rate)
- State Capitation - \$6240
- Australian Geoscience Council subs - \$2,083 (based on membership numbers)

Signature:



*Ron Colman, IAH National Treasurer*

Date: 21/10/2015

## **FEATURE NEWS**

### ***IAH Australia supports Aboriginal Water Initiative***

IAH President, Chris McAuley, has submitted a letter to NSW DPI Water on behalf of IAH Australia supporting the ongoing funding of the Aboriginal Water Initiative.

The submission can be viewed on the IAH website at <https://www.iah.org.au/correspondence/>.

### ***IAH member Craig Simmons named “SA Scientist of the Year”***

IAH Australia is pleased to announce that IAH member, Professor Craig Simmons, has been named South Australian Scientist of the Year at the 2015 South Australian Science Excellence Awards. Professor Simmons has made substantial contributions to hydrogeology in Australia and overseas, and will have a fantastic venue to promote groundwater during his tenure as Scientist in Residence for the Adelaide Advertiser.

### ***IAH submission to Victorian CSG Inquiry***

The Victorian branch of IAH Australia has made a submission to the Victorian Parliamentary Inquiry into unconventional gas.

The submission can be viewed on the IAH website at <https://www.iah.org.au/correspondence/>.

### ***NT “Our Water Future” IAH submission***

The NT Branch of IAH Australia has recently submitted a response to the Northern Territory Government’s “Our Water Future” Discussion Paper.

The submission can be viewed on the IAH website at <https://www.iah.org.au/correspondence/>.

## FROM THE BRANCHES

### NEW SOUTH WALES

#### IAH NEW SOUTH WALES BRANCH

##### 2015 Committee:

<b>Chair</b>	Katarina David	(UNSW)
<b>Presentations Secretary and External Communications</b>	Graham Hawkes	(AECOM)
<b>Treasurer</b>	Tingting Liu	(Hydrosimulations)
<b>Secretary</b>	Sean Cassidy	(EMM)
<b>Sponsorship Champion</b>	Mark Peterson	(ANSTO)
<b>Meeting Facilitator and Internal Communications</b>	Sean Daykin	(WSP Parsons Brinkerhoff)
<b>Newsletter Champion</b>	Dr Ben Rotter	(Coffey)
<b>Web Champion</b>	Doug Anderson	(Water Research Laboratory, UNSW)
<b>International Sponsorship Champion</b>	Dr Jay Punthakey	(Ecoseal)
<b>University Liaison</b>	Dr Bill Milne-Home	(UTS)
<b>Members Champion</b>	Ellen Kwantes	(WSP Parsons Brinkerhoff)
<b>National Vice President</b>	Dr Lange Jorstad	(Geosyntec)
<b>International Vice President - Australasia</b>	Dr Wendy Timms	(UNSW)

#### ***Local News***

Our regular branch meetings continue to be held at the office of WSP Parsons Brinckerhoff (WSP) located in the Sydney CBD. Thank you to WSP for supplying the convenient central venue, first class facilities, and food and drinks. Thank you to AECOM who hosted this year's Darcy Lecture in August in their central Sydney CBD office and for providing food and drinks.

IAH NSW branch provides events that span all stages of a career in hydrogeology. Our Student Night event provides a platform for students, and our Young Professional Award recognises young professionals. For mid to late career hydrogeologists, a forum is provided for technical presentations. Highly experienced professionals join our panel during Elders Night, with esteemed NSW hydrogeologists recognised by the receiving of the Woolley Award at or near retirement.

## **NSW Sponsors**

IAH NSW gratefully acknowledges the contributions of its 2014/15 sponsors. Details of sponsors can be found on the website at <http://www.iah.org.au/about/new-south-wales/nsw/-branch-sponsors>.

Our Gold Sponsors include AECOM, ALS Laboratory Group, Douglas and Partners, Earth Science Information Systems, Environmental Strategies, EMM, Geosyntec, Hydrosimulations, NSW Department of Environment Climate Change and Water, and RPS Aquaterra.

Our Silver Sponsors include Frans Kalf and Associates, EcoSeal and C. M. Jewell & Associates.

## **Recent Events**

### **October 2015, McElhiney Lecture - Drilling Fluids: A Common Sense Approach - Ronald Peterson**

IAH-NSW, the NGWA and their sponsors are proud to present this last presentation of the McElhiney Lecture 2015 in Australia by Ronald B. Peterson (Baroid Industrial Drilling Products) on "Drilling Fluids: A Common Sense Approach".

Ronald B. Peterson's talk covered the evolution of the water well industry with emphasis on drilling fluids and grouts, and the progress that has been made over time as technology and the understanding of drilling fluids has improved.

Ron's lecture provided basics for the proper planning, implementation, and follow-through of a well-designed drilling program with the goal of providing the best seal possible during the final well construction.

This McElhiney Lecture was proudly sponsored by Franklin Electric (National Ground Water Association) and our IAH-NSW Gold and Silver Sponsors.

### **September 2015, Student Night**

This event featured presentations from three PhD students. The following students discussed their research on the following topics:

- Danielle Griffani, University of Sydney: Contaminant and heat transfer in fractured porous materials
- Monika Markowska, UNSW, Australia: Cave monitoring to constrain the paleoclimate interpretation of  $\delta^{18}\text{O}$  proxy in speleothems from semi-arid areas
- Rory Williams, Macquarie University: The geomorphic and hydrological structure and function of a chain-of-ponds river system: A unique Australian river type.

The event was generously sponsored by Sara Mehrabi who is now living and working in Doha, Qatar.

### **Regional IAH NSW meeting, Newcastle – 25th August**

**Charlotte Iverach**, PhD student at UNSW, presented on **Detecting connectivity between an overlying aquifer and a coal seam gas resource using methane isotopes, dissolved organic carbon and tritium.**

There is public concern that coal seam gas (CSG) production will affect groundwater quality and quantity in overlying aquifers used to support irrigation, stock and domestic

water supplies. To assess this risk there is a need to map pathways of hydraulic connectivity using geochemical and isotopic measurements. Our results demonstrate that a combination of isotopic analysis and groundwater geochemical data can provide an early indication of hydraulic connectivity in areas of CSG production.

**Richard Cresswell**, Principal Hydrogeologist at Eco Logical Australia, presented on:

**Isotopes: The keys to understanding connectivity above coal seam gas operations in the Narrabri region.**

The Santos Narrabri Gas Project proposes to extract CSG from Permian-age coal measures that lie within the Gunnedah Basin, beneath the Pilliga Sandstone aquifer of the Great Artesian Basin. There are concerns that CSG activities will impact on the GAB aquifers despite expectations that there is a competent aquitard separating the two basins. Geochemistry and isotopes in water and methane have been used to determine whether there is a potential for cross-talk and to determine possible tracers to highlight any future changes to the system. This project confirmed that isotopes and minor elements provide good tracers to explore groundwater movement through and between the aquifers and are applicable to this region and this context.

The event was well attended by about 30-35 people from government, industry and research organisations.



**Charlotte Iverach**



**Richard Cresswell**

**Darcy Lecture 2015 – 10th August**

This year's Darcy Lecturer was presented Dr Rainer H. Helmig, head of the Department of Hydromechanics and Modelling of Hydrosystems at the University of Stuttgart.

The presentation was titled *Evaluating the Competitive Use of the Subsurface: The Influence of Energy Storage and Production in Groundwater.*

The lecture insight into how advanced numerical models might be used to analyse and predict the mutual influence of subsurface projects and their impact on groundwater reservoirs.



Ian Acworth receiving the Woolley award from IAH NSW Presentations



The lecture was hosted by AECOM.

Secretary, Graham Hawkes

The Woolley Award, an IAH NSW award presented annually to esteemed NSW hydrogeologists at or near retirement, was presented to Ian Acworth during the event.

Professor Ian Acworth is the founding director of the Connected Waters Initiative Research Centre at the University of NSW. Ian came to NSW and UNSW in 1988, where he led the groundwater research team based at the UNSW Water Research Laboratory, training numerous students and researchers. He was appointed the Gary Johnson Chair of Water Engineering in 2006, and in 2008 he established the UNSW groundwater research centre, the Connected Waters Initiative Research Centre, a cross faculty research grouping. Ian played a fundamental role in the National Centre for Groundwater Research and Training (NCGRT), and he established the NCRIS groundwater infrastructure program. His role in groundwater in NSW has been immense, and Professor Ian Acworth is therefore a very worth recipient.

### ***Upcoming Events***

#### **Australian Geomechanics Society/IAH Symposium on Recent Developments and Experiences with Groundwater and Excavations – 13th November**

NSW IAH is co-organising a one day Symposium with the Australian Geomechanics Society. The theme of the Symposium is “Recent Developments and Experiences in Excavations and Groundwater,” and will be held in Sydney in November. IAH will be providing keynote speakers and will be opening for registration to the event soon. Further details are to follow.

## AUSTRALIAN CAPITAL TERRITORY

### IAH AUSTRALIAN CAPITAL TERRITORY BRANCH

#### 2015 Committee:

<b>Chair</b>	Lucy Lytton	(Geoscience Australia)
<b>Vice-Chair / Secretary</b>	Scott Lawson	(Office of Water Science)
<b>Treasurer</b>	Peter Hyde	(Murray-Darling Basin Authority)
<b>Events Committee</b>	Sarah Marshall Gabby Yates Tim Ransley Tim Evans Chris Harris-Pascal	(Geoscience Australia)
<b>Communications Champion</b>	Stephen Hostetler	(Hostetler Hydrogeology)
<b>Membership Champion</b>	Hashim Carey	(Geoscience Australia)
<b>Student Coordinator</b>	Michael Short	

***No update available in this edition.***

## VICTORIA

### IAH VICTORIA BRANCH

#### 2015 Committee (as of 14<sup>th</sup> April 2015):

<b>Chair</b>	Alan Wade	(Aquade)
<b>Vice-Chair</b>	Ben Hall	(Eartheon)
<b>Secretary</b>	Tara Smith	(Jacobs)
<b>Treasurer</b>	Anthony Brinkley	(Jacobs)
<b>Events Committee</b>	Katy Kijek	(Port of Melbourne Authority)
<b>Communications Champion</b>	Heath Pawley	(Golder Associates)
<b>Membership Champion</b>	Alexis Valenza	(Valenza Engineering)
	Matt Currell	RMIT
	Anne Northway	EPA
<b>General Committee</b>	Riki Gresswell	CDM Smith
	Ben Moore	CFA
	Lynton Bourne	Noel Arnold & Associates
	Mike Hoban	DELWP

### ***Local News***

Our regular branch meetings continue to be held alternatively at the Melbourne RMIT City Campus. Thank you to RMIT for supplying the convenient central venue and first class facilities.

### ***Recent Events***

We had a very busy third quarter with five talks covering a large range of topics. Great attendance, as always.

#### **23 June 2015, Jacobs, Melbourne - NCGRT Distinguished Lecturer, Dr. Peter Dillon. Progress in Managed Aquifer Recharge and the Water Banking Frontier followed by an interactive session: *Listening to local MAR progress, plans and implementation issues***

Twenty two years of CSIRO and partners' scientific research on managed aquifer recharge with urban stormwater and recycled water, has involved a combination of monitoring of first of breed demonstration projects, synthesis across projects, laboratory studies and modelling.

This free lecture will cover a retrospective on some key research findings that together with our national treasures have given Australia an international head-start on the practice of MAR with urban stormwater and on MAR guidelines and policy. Myths that have deferred uptake and remaining research gaps will be exposed.

The talk will also project forward to reveal new technical, policy and institutional considerations for implementing water banking for drought security. It will

conclude with a concise summary of current activities of the IAH Commission on MAR.

### **IAH Presentation – 14 July 2015, Damien Finlayson (URS), Hydrogeology on the Western Front**

Damien has 26 years' experience in the field of hydrogeology and has worked in both the public and private sectors. He has 25 years consulting experience working widely throughout Australia having been based in Sydney, Adelaide, Melbourne and regional Victoria. He worked briefly in the UK, based in URS' Manchester office assisting in the development of the company's UK Water Resource Management business line. He currently lives and works in Tatura, Victoria.

Damien is also the author of a book entitled: "Crumps & Camouflets – Australian Tunnelling Companies on the Western Front" (available through Big Sky Publishing) and has completed a manuscript relating to the work of the Australian Electrical and Mechanical Mining and Boring Company on the Western Front, which is likely to be published in 2016.

When we think of World War One and the infamous trench warfare on the Western Front of France & Belgium, groundwater does not generally spring to mind. As is the case everywhere, groundwater was and still is present across the landscape where the great battles were fought between 1914-1918. The presentation is aimed at looking at the "British" experience of hydrogeology on the Western Front and how and why that knowledge was used, and more importantly, who was responsible for using the knowledge to best advantage – Australians of course!

### **13 August 2015, Golder Associates, Melbourne. Dr Rainer H. Helmig, Evaluating the Competitive Use of the Subsurface: The Influence of Energy Storage and Production in Groundwater**

Dr. Helmig is head of the Department of Hydromechanics and Modelling of Hydrosystems at the Institute for Modelling Hydraulic and Environmental Systems, University of Stuttgart, Germany.

With this lecture, Helmig provides insight into how advanced numerical models may be used to analyze and predict the mutual influence of subsurface projects and their impact on groundwater reservoirs, and the expanding need to do so.

For example, as the subsurface is increasingly being used both as a resource and as an energy and waste repository, resource conflicts are becoming more common and complex, such as thermal energy storage and the effects surrounding hydraulic fracturing in both geothermal and shale gas production.

During this lecture, the following topics were covered:

- Possible utilization conflicts in subsurface systems and how the groundwater is affected
- Fundamental properties and functions of a compositional multiphase system in a porous medium; basic multiscale and multiphysics concepts will be introduced and conservation laws formulated

- Large-scale simulation that shows the general applicability of the modeling concepts of such complicated natural systems, especially the impact on the groundwater of simultaneously using geothermal energy and storing chemical and thermal energy, and how such real large-scale systems provide a good environment for balancing the efficiency potential and possible weaknesses of the approaches discussed.

**29 September 2015 URS (an AECOM company), Southbank. McElhinney lectures, Ron Peterson, Drilling Fluids: A Common Sense Approach.**

Learn how using the proper drilling fluid for a particular project is paramount to a successful job during Ronald B. Peterson's lecture.

Ron Peterson covers the evolution of the water well industry with emphasis on drilling fluids and grouts, and the progress that has been made over time as technology and the understanding of drilling fluids has improved.

Peterson's lecture provides with the basics for the proper planning, implementation, and follow-through of a well-designed drilling program with the goal of providing the best seal possible during the final well construction.

Topics covered include the following:

- Evolution of the water well industry
- Importance of proper project planning and follow-through
- Functions of a drilling fluid
- Uses of bentonite focusing on its use as a basis for drilling fluids
- Development of other drilling fluid additives and their use to enhance the fluid properties
- Proper selection of a grout
- Development of grouts, and the issues and limitations in placement and in attaining a competent well seal.

**20 October 2015, RMIT University, Melbourne. IAH Victoria Presentation Student Presentation Night**

A great night with large attendance, drinks and nibbles (thanks to RMIT once again), and some exciting talks presented by university students covering interesting and diverse topics with groundwater being the focus.

Attila Gaal (La Trobe University):

"Assessment of hydraulic pumping and injection data to identify clogging in a Managed Aquifer Recharge scheme".

Christin Down, Chris Skinner & Jeanne Drouet (RMIT University):

"Groundwater depletion & contamination in the North China Plain: Implications and solutions"

Bill Howcroft (Monash University):

“Young Water and Old Solutes in Rivers and in Groundwater”

## ***Upcoming Events***

### **AGC 2015**

Several Victorian members will attend the Australian Groundwater Conference in Canberra 3-5 November 2015, organised by the National Centre for Groundwater Research and Training and the Australian Chapter of the International Association of Hydrogeologists. A major event involving groundwater researchers, industry professionals and policy development specialists.

We hope to see you there. Program and speakers available [here](#).

## **INTERNATIONAL CHAPTER UPDATES**

There are around 36 active chapters spread across the continents and 6 active commissions. IAH members are constantly travelling for work and sharing ideas and broad knowledge with other specialists.

We thought it would be a good idea to liaise with some of the other chapters and see if they have a different approach to similarly experienced problems.

For this issue, we have visited three overseas Chapters (France, Germany and Italy), all actively involved in promoting the understanding of groundwater in their country. We have also identified several commissions involved in working on groundwater related issues across the globe.

We encourage Australian members to visit the following links:

### **French Chapter**

<http://www.cfh-aih.fr/>

A large number of publications, with abstract in English

### **German Chapter**

<https://germany.iah.org/>

Very active chapter organising numerous national and international conferences

### **Italian Chapter**

<http://www.iahitaly.it/>

For a detailed feedback on the last congress, hosted in Rome

### **Commission on Groundwater and Climate Change**

Website: <http://www.gwclim.org>

## **Commission on Karst Hydrogeology**

Website: <http://www.iah.org/karst>

LinkedIn: <http://www.linkedin.com/groups?gid=4957376>

## **Commission on Managing Aquifer Recharge**

Website: <http://www.iah.org/recharge>

## **Commission on Regional Groundwater Flow**

Website: <https://iah.org/regionalgwflow/>

LinkedIn: [https://www.linkedin.com/groups?home=&gid=8191261&trk=anet\\_ug\\_h  
m](https://www.linkedin.com/groups?home=&gid=8191261&trk=anet_ug_hm)

## **WESTERN AUSTRALIA**

### **IAH WESTERN AUSTRALIA BRANCH**

#### **2015 Committee:**

<b>Chairperson</b>	Ian Brandes de Roos
<b>Vice – Chairperson</b>	Mariajose Romero-Segura
<b>Secretary</b>	Carsten Kraut
<b>Treasurer</b>	Peter de Broekert
<b>Meetings Secretary</b>	Todd Hodgkin
<b>Ministerial Liaison</b>	Keith Brown
<b>Education Representative</b>	Ryan Vogwill
<b>Media Liaison</b>	Ryan Vogwill
<b>Membership Champion</b>	Mal McGivern
<b>State Liaison</b>	Grant Bolton
<b>Presenter Coordinator</b>	Pauline Amez-Droz
<b>Seminar Coordinator/Sponsorship Champion</b>	Geoff Pettifer
<b>Newsletter Champion</b>	Keith Brown
<b>Newsletter Assistant</b>	Melissa Nyga
<b>Web Champion</b>	Eduardo de Sousa
<b>Web Assistants</b>	John Enkelmann Lynn Reid
<b>Student Champion</b>	Gemma Bloomfield
<b>ECHN Champion</b>	Rachel Wroe Philip Commander

#### **2015 Local News**

The Jul to Sep 2015 quarter was a busy period for the WA IAH. Functions included three technical presentations, our annual social night and the ECHN Pizza and Pint Night summarised as follows:

- 2015 NCGRT Distinguished Lecturer – Peter Dillion
- 2015 Annual Social Meeting
- 2015 Henry Darcy Lecture - Rainer H. Helmig
- 2015 Early Career Hydrogeologist Network Experts Panel Discussion
- IAH Technical Presentation – Alan Puhlovich

Keep your diaries free for the always entertaining *IAH Western Australia AGM* to be followed by the *Student Presentations* on the Wednesday 2<sup>nd</sup> of December to be held at FMG offices. Be there or be square.



## ***Recent Meetings***

### **28th July 2015: Progress in Managed Aquifer Recharge and the Water Banking Frontier. 2015 NCGRT Distinguished Lecturer – Dr. Peter Dillon**

Peter's excellent talk on the complexities of managed aquifer recharge blended his scientific experience, the implications for management, and, future policy direction.

#### ***Event partners***



### **28th July 2015: IAH WA Branch – Annual Social Meeting**

The Annual Social get together was held following the NCGRT lecture. The event was held at the Moon and Sixpence and more than 50 people attended.

Thanks once again to the Connector Drilling (Ausdrill Group) team for their sponsorship.

#### ***Generously sponsored by***



### **19th August 2015: Evaluating the Competitive Use of the Subsurface: The Influence of Energy Storage and Production in Groundwater. 2015 Henry Darcy Distinguished Lecturer – Dr. Rainer H. Helmig**

Dr Rainer H. Helmig delivered this year's 2015 Darcy Lecture to packed audience at the Atrium on Wednesday night. Rainer's talk outlined the use of advanced

numerical models to assess the mutual influence of subsurface projects and their impact on groundwater reservoirs.

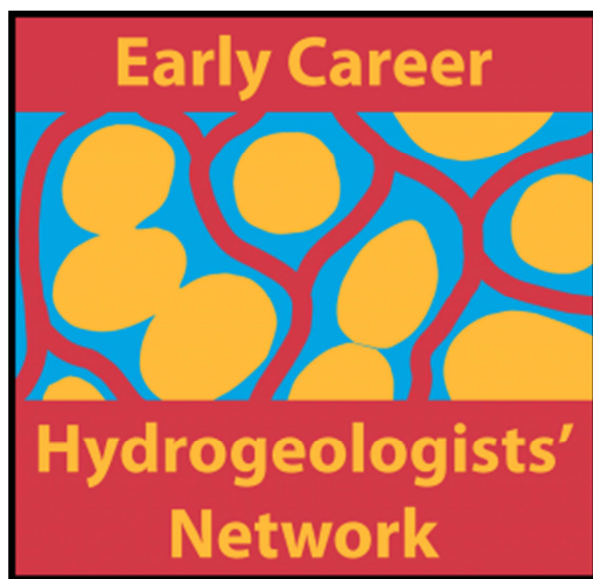
*Event partners*



NATIONAL CENTRE FOR  
**GROUNDWATER**  
RESEARCH AND TRAINING



**8<sup>th</sup> September 2015: ECHN Pizza and Pint Night with Experts**



On Tuesday 8 September the ECHN held an experts panel event at the University of Western Australia. The panel consisted of Jon-Philippe Pigois (Department of Water), Miranda Taylor (Rockwater), John Waterhouse (Golder Associates) and Blair Douglas (BHP Billiton). There was no PowerPoint. No minutes were taken, no video or audio recordings. There was plenty of beer and pizza (kindly provided by the IAH). It was a rare opportunity for industry experts to generously and candidly give their experience and advice.

Their advice was invaluable: to back yourself, do your research, figure out what's important to you, engage in the early-career tasks that teach you the foundations of hydrogeology, look for opportunities in other water-related disciplines, to build a network. As one expert noted, it may also help to be in the right place at the right time.

There were also war stories and personal stories of how the experts got to be in the positions they now hold. Afterwards we had the opportunity to chat one-on-one with the experts.

This very engaging and successful event was made possible thanks to the hard work of the ECHN, the industry experts, and in particular the contributions of Rachel Hamilton and Gemma Bloomfield.



**16<sup>th</sup> September 2015: Managing groundwater for operations and closure: unique technical challenges and pressures at a high-profile uranium mine. IAH Technical Presentation – Alan Puhlovich**

Alan's (Golder Associates) enlightening and well-presented talk described his hydrogeological experiences during his time working on a high-profile uranium mine. Topics covered included development and evolution of conceptual model(s), the complexities of GW- SW interaction, a novel risk management approach to monitoring, through to sensitive issues such as water disposal, pit backfilling/closure and leaky tailings dams.

Alan also explained how the attitudes and perceptions of groundwater, by both internal and external stakeholders, influenced technical direction over time and focussed studies to address key concerns.

***Upcoming Events***

***2<sup>nd</sup> December 2015: IAH Western Australia AGM and Student Presentations.***

*IAH Western Australia AGM to be followed by the Student Presentations- Simon Nield Prize on the Wednesday 2<sup>nd</sup> of December venue TBA.*

*Catch up with further events at <http://www.iah.org.au/events/western-australia> or on [Facebook](#)*

## **SOUTH AUSTRALIA**

### **IAH SOUTH AUSTRALIA BRANCH**

#### **2015 Committee:**

<b>President</b>	Steve Barnett
<b>Vice President</b>	Neil Power
<b>Membership champion</b>	Tavis Kleinig
<b>Committee member</b>	Russel Martin
<b>Web master/mistress</b>	Fiona Adamson
<b>Modelling Forum</b>	Juliet Wood

### ***Recent Events***

#### **SA Groundwater Forum 2015 – 22nd July 2015**

The focus of this inaugural one day Groundwater Forum on July 22nd was to showcase the current status of South Australia's groundwater resources, profile the latest developments and research on various aspects of our groundwater resources, as well as discussing future opportunities for groundwater development within South Australia. About 100 attendees from agencies, research bodies and consultancies attended.

#### Topics included:

- Results from the first comprehensive audit of groundwater use in South Australia from over 9,000 wells – how much, where from, for what purpose
- Trends in groundwater levels, salinity and extraction
- Water well drilling activity – where, how deep, for what purpose
- Latest DEWNR information products
- MAR – storm-water and waste-water schemes, volumes recharged, operational issues
- Research groups- progress report on current projects
- Mining – current use, case studies, potential demand
- Monitoring – network rationalisation progress
- Contaminated sites,
- River Murray issues
- Climate change impacts

For further information, go to <https://www.iah.org.au/events/south-australia/>.

## **NORTHERN TERRITORY**

### **IAH NORTHERN TERRITORY BRANCH**

#### **2015 Committee:**

<b>Chair</b>	Joanna Ellis
<b>Vice-Chair</b>	Lee Evans
<b>Secretary</b>	Steve Tickell
<b>Treasurer</b>	Mel Woltmann

### ***Local News***

July to September marks the dry season for the NT. This is typically a quiet time for us as a branch, as members are off 'out bush', whether working or playing. The Branch had planned to undertake an extended field trip to Lawn Hill this dry season but due to limited availability, the trip was cancelled.

### ***Welcome***

We welcome new member from the ACT, Gabrielle Yates, who is moving to Katherine in November. Welcome!

### ***Recent Events***

The NT Branch hosted Professor Rainer Helmig as the Darcy Lecturer for 2016. The talk was well attended and Rainer's enthusiastic and playful delivery was much appreciated. We thank Charles Darwin University for hosting us. [see photo attached].

We took Rainer to the famous Darwin Festival Lighthouse area to show him a bit of 'local culture', which we think he enjoyed!

### ***Upcoming Events***

The NT Branch AGM will be held on at 4:30pm on 26th November at the Department of Land Resource Management, 4th Floor Goyder Building, Palmerston. All members welcome. If you are interested in nominating yourself for a spot on the committee, please email Branch secretary Steve Tickell at [steven.tickell@nt.gov.au](mailto:steven.tickell@nt.gov.au).

The NT Branches of IAH, the Australian Water Association and Engineers Australia are planning a joint Christmas breakfast on Friday 27th November. Stay tuned for confirmation and location information.

## **TASMANIA**

*No update available in this edition.*

## **QUEENSLAND**

*No update available in this edition.*

## NATIONAL CONFERENCES AND EVENTS



The National Centre for Groundwater Research and Training and the Australian Chapter of the International Association of Hydrogeologists are joining forces to deliver the Australian Groundwater Conference in Canberra in 3-5 November 2015. We are looking forward to welcoming groundwater researchers, industry professionals and policy development specialists to this exciting event.

We are strongly committed to delivering a conference that enables delegates to examine the multi-dimensional challenges affecting the sustainable management of Australia's groundwater resources in an innovative and engaging manner. We also want to create opportunities for delegates to share their experiences, inform best practice, and identify the steps they can take to bring about lasting improvements in the management of Australia's vital groundwater resources.

### **Conference will include but is not limited to**

1. State of the art modelling and data management
2. Emerging measurement technologies
3. Urban groundwater issues
4. Climate change, land use and groundwater
5. MDB Plan: Progress and future work
6. Groundwater, Energy & Mineral Resources
7. Groundwater science-policy nexus: Socioeconomic/Governance challenges and opportunities

Call for abstract submissions will be confirmed and open in early 2015.

Further details are available from the conference website:

<http://www.groundwater.com.au/pages/australian-groundwater-conference-2015>



# groundwater industry training

EDUCATION FROM THE GROUND UP



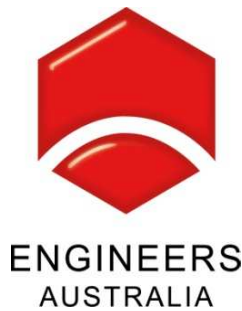
National Centre for  
**Groundwater**  
Research and Training

For upcoming courses, see <http://www.groundwater.com.au/events/training>

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## AGS/IAH Symposium



### *2015 AGS/IAH Joint Symposium*

## **Recent Developments and Experiences with Groundwater and Excavations**

***Friday 13 Nov 2015***

***Australian National Maritime Museum, Darling Harbour,  
Sydney***

The Sydney Chapter of the Australian Geomechanics Society (AGS) and the International Association of Hydrogeologists, Australia are proud to present the 19<sup>th</sup> annual joint Symposium to be held on **Friday 13<sup>th</sup> November 2015**, entitled 'Recent Developments and Experiences with Groundwater and Excavation'.

The Symposium forms part of the continuing program of events by the Sydney Chapter of the AGS, joined this year by IAH NSW and is designed to keep the engineering and groundwater profession aware of recent developments in particular the groundwater aspects of geotechnical engineering practice.

### ***Overview of the 2015 Symposium***

The 2015 AGS Symposium will present the state-of-the-art practices, innovative technologies, new research results and case histories in construction and design towards safer excavations, importance of groundwater in design, more cost effective shoring practices, accurate groundwater modelling and better management systems for urban groundwater issues.

The goal of this symposium is to provide professional engineers, hydrogeologists, researchers, specialist contractors, regulators, educators and students the opportunity to meet and share their knowledge and experiences in this area.

This symposium will bring together engineers, engineering geologists, hydrogeologists and researchers who are interested on new advances in excavation techniques, groundwater control, lessons learnt from excavation collapse and experiences in geotechnical aspects of groundwater and excavation.

For more information, see <https://www.iah.org.au/events/agsiah-symposium/>

## **IAH PUBLICATIONS**

Discounted IAH publications in the 'International Contributions to Hydrogeology' and the 'Selected Papers' series can be ordered by Australian IAH members directly from Macmillan Publishers Australia in Victoria.

[customer.service@macmillan.com.au](mailto:customer.service@macmillan.com.au) or [orders@macmillan.com.au](mailto:orders@macmillan.com.au)

Remember to quote your IAH Membership Number, which entitles you to a substantial discount. If you don't know your IAH membership number contact the Secretariat at: [joel-p@groundwater.com.au](mailto:joel-p@groundwater.com.au)