

# NEWS

# & information

IAH - THE WORLD-WIDE GROUNDWATER ORGANISATION

Furthering the understanding, wise use and protection of groundwater resources throughout the world

## MAY 2017

### Also in this issue:

Groundwater and the SDGs  
World Water Day  
Commissions & Networks  
Books news  
Meeting reports  
KINDRA inventory launch  
Chapter updates  
New members  
Conference listing  
Photo competition

and the usual IAH  
announcements and news



**INTERNATIONAL  
ASSOCIATION OF  
HYDROGEOLOGISTS**



The “main event” for the 2017 World Water Day took place in South Africa, and we are indebted to IAH member Mark Schapers for his report.

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### NEW EXECUTIVE MANAGER



As many readers will know, John Chilton is retiring as Executive Manager of IAH. Handover to our new appointee, Ian Davey, is underway...

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### UN-WATER & GRIPP



New IAH President António Chambel reports from his recent UN-Water meeting in Geneva, during which the GRIPP project partners also met .

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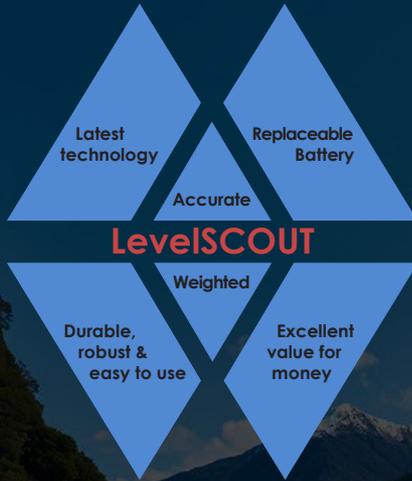
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IAH News and Information is published 3 times a year. It is distributed as an insert in Hydrogeology Journal and is also published via IAH's website and email alerts.

It reaches all members and associated members of the International Association of Hydrogeologists, reaching more than 4000 people and can also be freely downloaded by individuals worldwide.

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Copy dates are 1 March, 1 June and 1 October.

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## Welcome to IAH's next 60 years...

The last News and Information reflected extensively on our 60th anniversary year and the events and activities with which this milestone was marked and celebrated. These activities continued right up to the end of the year, as reported here on pages 21 and 22. Further efforts will continue to collate and report more of the historical information which has been obtained and to make it available to members via the IAH website.

We now move into IAH's next 60 years with fresh momentum and ideas from the new Council and Executive and with our membership standing at 4169, the highest it has ever been. New president António Chambel has already been actively engaging with our international partners (pages 10 and 11) and to assist in ensuring groundwater is rightfully and appropriately recognised in the SDGs. A new Strategic Overview Paper has been prepared (page 14) and is already being used for this purpose. The Executive met in March, as reported on page 8, with many plans and propositions up for discussion, not least how we can increase our income so that we can undertake more of the activities identified in the IAH Forward Look and subsequently.

## But farewell and thanks from me...

It is, however, also the time for me personally to say "fare you well". It is certainly not goodbye, as I will continue as an IAH member, going to chapter meetings and you may even find me at conferences with enough time to listen to a few more of the presentations! As reported on page 9, we have been through a careful recruitment process to find a suitably qualified and experienced replacement, and I believe from the work I have been doing together during this transition that we have succeeded in this. I can now see I was lucky to be in the right place at the right time when the opportunity came along, and I have greatly enjoyed my nine years as IAH Executive Manager. I'm proud of what we have achieved and the many developments and innovations that we have made.

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Practising for retirement; Torres del Paine, Chile, February 2017

These are, of course, always joint efforts and I am happy to be able to thank councils, commissions and networks and national chapters, the publications team and indeed all IAH members for their support over these nine years. I've certainly made a lot of new friends. As a career scientist, I am not a "natural" as an administrator, but I have been extraordinarily fortunate to have had the support of an experienced Secretariat team. Kellie, Sharon and Sue have all been with me throughout this time and their commitment to IAH, their enthusiasm and ideas (and sometimes their patience) deserve my most especial personal thanks.

Go well, IAH!

**JOHN CHILTON**



# MEDIA FOCUS

A selection of groundwater features from around the world

## UAE: GROUNDWATER RESEARCH CAN HELP TACKLE COUNTRY'S WATER SCARCITY

Like other Arabian Gulf states, the UAE has long faced water scarcity, and this problem intensifies as growth and development continue. World Water Day turned the global spotlight on the precious resource, and this is good news because the UAE has one of the highest per-capita water consumption figures in the world despite having limited water resources and modest rainfall.

One study puts it at 550 litres per day, compared with the global average of about 200 litres. About 51 per cent of the UAE's water supply comes from groundwater and demand is such that a UAE University report in 2015 warned that the country's water supplies could be depleted within the next few decades. It is vital to ensure that as much as possible of the rain that falls replenishes water supplies, as there is a need to improve the natural renewal of groundwater resources. Dr Mohsen Sherif, director of the National Water Centre at UAE University in Al Ain, has dedicated the past 15 years to understanding this issue.

<http://www.thenational.ae/uae/environment/uae-groundwater-research-can-help-tackle-countrys-water-scarcity>

## CALCULATING RECHARGE OF GROUNDWATER MORE PRECISELY

A team of international researchers led by University of Freiburg hydrologist Dr Andreas Hartmann suggests that inclusion of currently missing key hydrological processes in large-scale climate change impact models can significantly improve our estimates of water availability.

The study shows that groundwater recharge estimates for 560 million people in karst regions in Europe, the Middle East and Northern Africa, are much higher than previously estimated from current large-scale models. The scientists have shown that model estimates based on entire continents up to now have greatly underestimated in places the amount of groundwater that is recharged from fractions of surface runoff. This finding suggests that more work is needed to ensure sufficient realism in large-scale hydrologic models before they can be reliably used for local water management. The team has published their research findings in the scientific journal Proceedings of the National Academy of Sciences.

<https://www.sciencedaily.com/releases/2017/02/170228131015.htm>

## INDIA: IS GLOBAL WARMING BEHIND INDIA'S DEPLETING GROUNDWATER?

Changing rainfall patterns may be depleting India's groundwater storage more than withdrawals for agricultural irrigation, says a new study published in January by Nature Geoscience. While the diminishing of India's groundwater is widely attributed to over-extraction, especially in the northern agricultural belts of Punjab and Haryana, this study suggests decline in rainfall caused by rise in the temperatures in the Indian Ocean — a major factor in monsoonal rainfall patterns over the Indo-Gangetic Plain — to be a more important cause. "This study adds another dimension to the existing water management framework. We need to consider not just the withdrawals but also the inputs to the system," says Yoshihide Wada, co-author of the study and deputy director, Water Programme, International Institute for Applied Systems Analysis, Austria. Importantly, the study finds links between the rise in sea surface temperatures of the Indian Ocean and the declining monsoonal rainfall which co-author Vimal Mishra says may be linked to climate change, though this is yet to be proven.

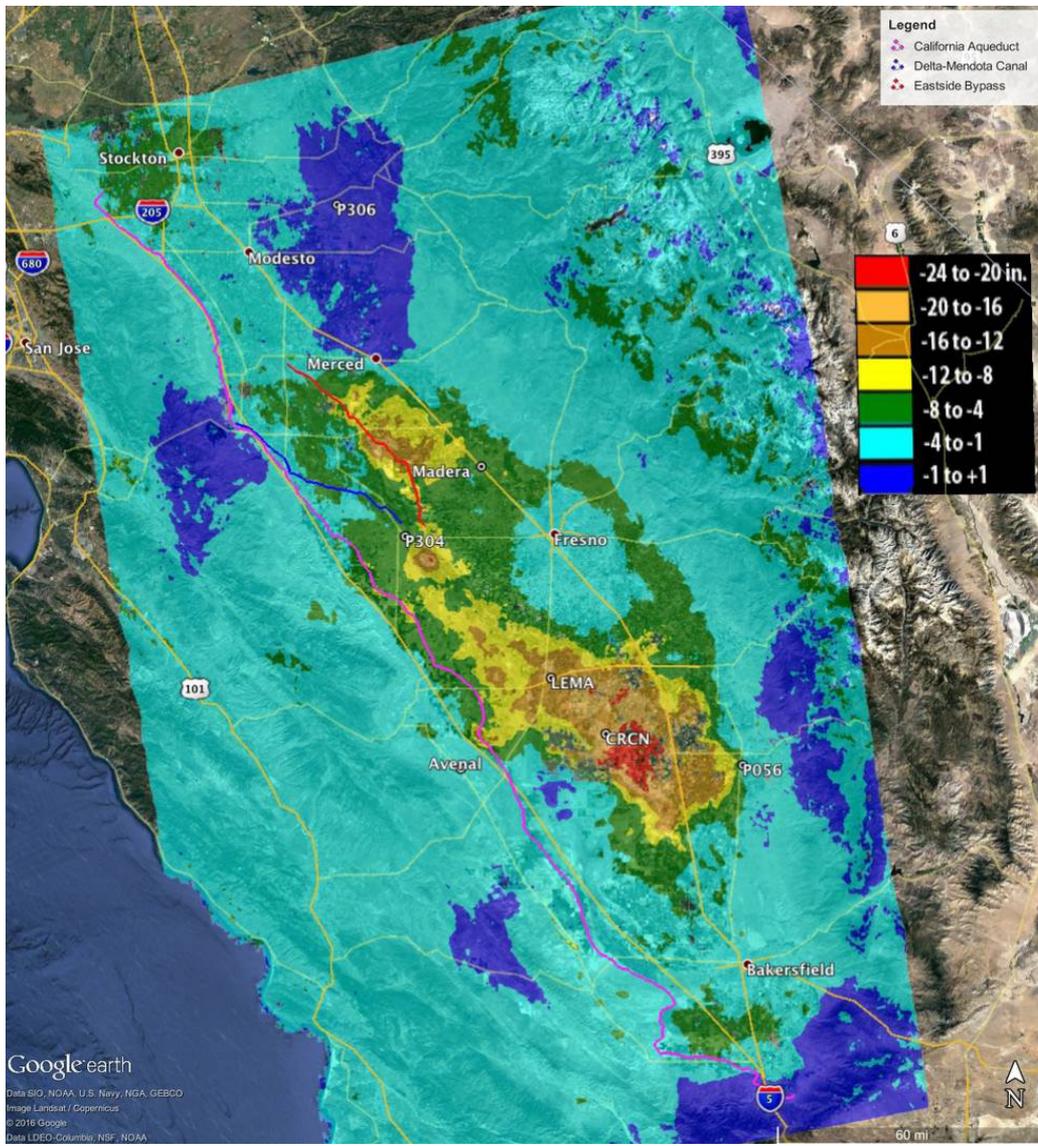
<http://www.scidev.net/asia-pacific/water/news/warming-india-depleting-groundwater.html>



## CALIFORNIA, USA: DANGERS OF LAND SUBSIDENCE FROM GROUNDWATER ABSTRACTION

Subsidence resulting from heavy abstraction of groundwater has become so serious in the San Joaquin Valley that critical infrastructure is at risk. In “High and Dry”, a new book on the global groundwater crisis, IAH’s Bill Alley and his wife Rosemarie explain how things got so bad.

<https://www.newsdeeply.com/water/articles/2017/03/14/the-dangers-of-land-subsidence-from-californias-groundwater-overdraft>



Total subsidence in California’s San Joaquin Valley between May 7, 2015 and Sept. 10, 2016, as measured by ESA’s Sentinel-1A and processed at JPL. Two large subsidence bowls are evident, centered on Corcoran and southeast of El Nido, with a small, new feature between them, near Tranquility. Credits: European Space Agency/NASA-JPL/Caltech/Google Earth



# WORLD WATER DAY

The “main event” for the 2017 World Water Day took place in South Africa, and we are indebted to IAH member Mark Schapers for this report.

## SECRETARIAT



The 2017 World Water Day was celebrated by over a thousand delegates in the Inkosi Albert Luthuli International Conference Centre in Durban, featuring the global launch of the 2017 UN World Water Development Report: “Wastewater: The Untapped Resource”. As a consequence, the theme was “ Sanitation and Wastewater: The Untapped Resource”.

Following introductory remarks from the main UN agencies involved, South African President Jacob Zuma provided the keynote address and Professor Stephen McCaffrey was announced as the winner of the 2017 Stockholm Water Prize. Dr McCaffrey is Distinguished Professor of Law at the University of the Pacific in Sacramento, California, and is the single most respected authority on international water law whose work influences scholars, legal practitioners and policy-makers and contributes to the sustainable and peaceful management of shared waters. Professor McCaffrey has been acting as legal counsel to states in several negotiations concerning international watercourses. He has served as counsel in many inter-State disputes over shared water resources, for example between Argentina and Uruguay, Pakistan and India, and Slovakia and Hungary, which have been heard by international courts and tribunals. He has guided often multi-year negotiation processes among riparian countries with respect to transboundary water law, for example, on the Nile, Mekong, and Ganges, some with numerous countries involved.

Within the theme for 2017, naturally much of the focus of discussion was not on groundwater specifically, but several groundwater aspects were presented and discussed during the programme of the associated technical conference. Items specifically related to groundwater included:

- Thematic session 11: SADC-GMI's Skills Development Model for Sustainable Groundwater Management in the SADC Member States by James Sauramba;
- Field visit to a nano-filtration membrane water purification treatment plant. The project entails treating water from two boreholes located within the proximity of the plant to potable standard (SANS 241). The plant is needed because of the high fluoride, iron and manganese encountered in the borehole water. The plant will treat approximately 80,000 litres per day of water over a 10-hour period which will then be sent to the existing reservoir onsite (reservoir E5 in the Ekhukhanyeni area) and then be distributed via the existing reticulation system;
- Ms Nomvula Mokonyane launched the Water Research Commission South African Mine Water Atlas which includes a groundwater vulnerability model as one of its major inputs.

Groundwater considerations were also touched on in several of the broader forums, including Thematic Session 3: Sanitation Safety Planning for Safe Use of Wastewater in Agriculture, and Thematic Session 16: Extreme Events. Overall the conference was limited in its direct exposure to groundwater, but with the growing interest in the re-use of wastewater, no doubt has indirect and potentially long term considerations for the effects that such re-use could have on groundwater.

MARK SCHAPERS

 <http://www.worldwaterday.org/>



## EXECUTIVE MEETING, UK

The new IAH Executive met at the beginning of March, choosing Dorchester-on-Thames again to facilitate the participation of new Executive Manager Ian Davey (see next articles), Robbie Dow to help take forward our corporate sponsorship strategy and Stephen Foster to review the Strategic Overview Series. António Chambel, Bruce Misstear, Teodóra Szócs and Dave Kreamer comprised the Executive team, with Kellie and Sue each joining part of the meeting from the Secretariat.

The new Executive took the opportunity to reflect on the outcome of the 2016 council elections, the 60th anniversary celebrations, some of which are reported in the Chapter News on pages 21 and 22, and the Montpellier Congress. A report on preparations for the 44th Congress in Dubrovnik was received, and by the time you read this, Executive member Bruce Misstear will have made a liaison visit to support and advise the organising committee as their activities intensify in the months immediately before the congress. Plans for the 45th Congress in Korea in 2018 are on track and potential offers for 2019 and 2020 were considered.

The meeting also presented an important opportunity for the Executive members to get to know their new roles, tasks and responsibilities. As an example, António handed on responsibility for IAH's Commissions and Networks (C&N) to Dave, who responded with a plan to contact all of them to update himself on their activities and to prepare the reviews of those which fall due in 2017. As Executive member now responsible for Finance and Membership, Teodóra was able to review the financial and membership information presented and to consider which regions present the best opportunities for membership growth.

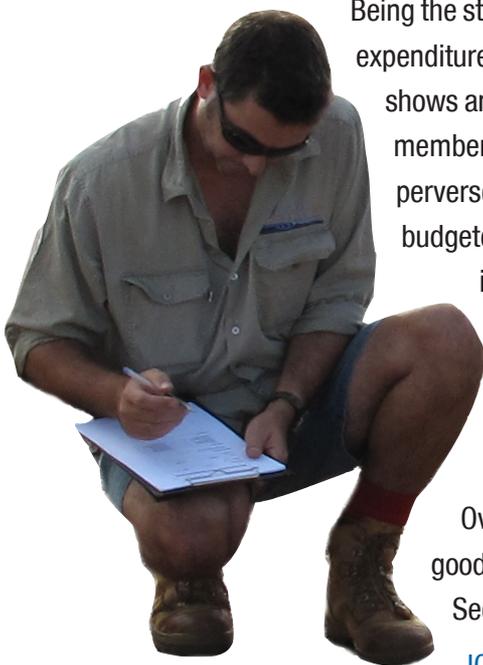
Being the start of a new year, financial matters figured highly. With most of the income and expenditure issues for the year end resolved, the provisional end of year financial statement shows an operating deficit of €10,000 to €15,000 on a turnover of €320,000. Although total membership of 4169 at the end of 2016 was up and again the highest it has ever been, the perverse impact of 2017's currency fluctuations means that fee income was below that budgeted in euros but just above that in sterling, the opposite of 2015. Further more the impact on the values of sterling, dollars and euros after the Brexit vote in the UK will be felt in our formal accounts, which use an exchange rate from the end of the year. Whatever the final outcome, it is vital for us to maintain the upward trend in our membership, so please renew if you have not already done so, and please encourage your colleagues to renew or join.

Overall, it was an intensive and fruitful two days, setting the new Executive off in a good way and providing Ian with a comprehensive view of how the IAH Executive and Secretariat work together to manage our association.

JOHN CHILTON



From left, clockwise: Ian Davey, Bruce Misstear, Teodóra Szócs, Antonio Chambel, Dave Kreamer, John Chilton



# NEW APPOINTMENT: IAH EXECUTIVE MANAGER

As many readers will know, John Chilton is going to retire as Executive Manager of IAH after nine years in this role. With his energy, ability and integrity, John has made an enormous contribution to the Association over this period. I would like to take this opportunity personally to thank John for his great service to IAH and to wish him all the best in his retirement. Having said this, I am sure John will continue to be a very active member of IAH, and that we will be able to welcome John and his partner Janet at future IAH congresses and other events.

Following interviews last December, I am pleased to announce that Ian Davey joined as our new Executive Manager from 1st April. Ian is a hydrogeologist with over 30 years' experience, much of it working for the Environment Agency in England. In recent years, this has included project management and advisory work outside of UK, including Poland, Bulgaria and Turkey.

Ian has been a member of IAH since 1987 and is familiar with IAH activities both through his work as treasurer for several years of the British National Committee and his involvement in the Forward Look meeting in Reading in 2010. Although John will be a hard act to follow, the Executive is confident that the Secretariat will be in good hands with Ian and John has kindly agreed to help Ian through the transition period. Please provide the new Executive Manager with the support that you have given to John.

## BRUCE MISSTEAR

...I am very much looking forward to working with all our members to provide support in taking forward the ambitions you all have for the Association. It will be quite a challenge for me to try to 'step into John Chilton's shoes' and I am grateful that he has offered his continued help and advice in the background as I take on this role.

Although I started out in oil exploration, working in Europe and the Middle East, I quickly moved on to groundwater, taking on technical roles and applying environmental legislation to protect groundwater resources and quality. Much of my time has been spent on developing policy and guidance on integrated water resources management in the UK and with colleagues in the European Union. Taking on the role of Executive Manager of the IAH as I continue to work part time for the Environment Agency is a new direction for me but one that I am very much looking forward to.

I'm looking forward to meeting as many of you as possible in the future. Please feel free to contact me or other members of the Secretariat if there is anything you would like us to help with or if you have suggestions on how we can do an even better job together! My new IAH email address is given below.

## IAN DAVEY

 [idavey@iah.org](mailto:idavey@iah.org)



Handing over IAH affairs... Ian Davey, left, in discussion with John Chilton

*[continued over...]*

# NEW PRESIDENT ANTÓNIO CHAMBEL REPRESENTS IAH IN GENEVA

António Chambel, IAH's new President, represented the association at two meetings in Geneva, the regular UN-Water meeting (6-7 February) and the meeting of GRIPP project partners (8-9 February). Here is his comprehensive report on the visit.

## Meeting of UN-Water

IAH has often participated in UN-Water meetings as a UN-Water partner. As usual, a part of the meeting was reserved for internal coordination of UN-Water. In the part of the meeting open to partners there was an update and presentation of a report of the High Level Panel on Water (HLPW), a resolution on the "International Decade for Action – Water for Sustainable Development" 2018-2028, and reports on the third United Nations Conference on Housing and Sustainable Urban Development (UN-Habitat), on UN-Water participation in the 22nd Conference of the Parties to the UN Framework Convention on Climate Change (Expert Group on Water and Climate Change), on the Budapest Water Summit in 2016, on the 15th session of the WMO Commission for Hydrology and on the Global Forum for Food and Agriculture.

The following day began with an update on the implementation of the 2030 Agenda, followed by a session on monitoring and reporting of water and sanitation in the Sustainable Development Goals, with updates on the SDG indicator process, on integrated monitoring and reporting of water and sanitation related SDG targets and indicators (GEMI), an update from the WHO/UNICEF Joint Monitoring Programme on Water Supply and Sanitation (JMP), an update from the UN-Water Global Analysis and Assessment on Sanitation and Drinking-Water (GLAAS), an update on the 2018 UN-Water Synthesis Report on water and sanitation and the publication plan for 2017-2018.

The afternoon was dedicated to planning for World Water Days, World Water Development Reports and World

Toilet Days, followed by the planning of future events for UN-Water's possible engagement, including the Sanitation and Water for All High-Level Meetings, 20-21 April 2017, Washington DC, the UN Conference to Support the Implementation of SDG 14 (Oceans), 5-9 June 2017, New York (UNDP), or the UNCCD Conference of the Parties (COP 13), 4-15 September 2017, Ordos, China.

The UN-Water meeting attracted the presence of representatives of more than a hundred water related institutions. The resolutions discussed seemed already agreed, with time for a few comments but little change. A main concern for IAH and other partners dealing with groundwater (IWMI, IGRAC) was that the SDG indicators for water are not well suited for characterizing groundwater quality and have been defined largely based on surface water quality approaches. Another important issue coming from the meeting was the announcement that FAO has finally recognized officially the role of agriculture as a water contributor (and not only consumer) to surface water and groundwater and its influence on water quality and ecosystems. As a result, FAO has established a department related to Water, Agriculture and the Environment; the first time an FAO department has the word "water" in it.

Recognising deficiencies in the SDG's indicators related to groundwater, IAH had begun to work on this at the beginning of 2017. An IAH Strategic Overview Paper was presented in draft to the meeting in Geneva, was revised and completed in March and is now available from the IAH website (see page 14).



## GRIPP

A side meeting presenting the work of GRIPP (Groundwater Solutions Initiative for Policy and Practice) was organised by IAH, IGRAC, IUCN and IWMI during lunch time of the second day of the UN-Water meeting to raise interest amongst participants in GRIPP's planned work programme. As reported previously in News and Information, GRIPP is an initiative to support the 2030 Global Development Agenda of sustainable and equitable development and the associated SDGs, specifically as they relate to groundwater development, use, and management. GRIPP was created in 2016, and IAH has been a member of the core group since the beginning.

On 8 and 9 February GRIPP partners and invited guests involved in the initiative met to discuss the work programme. The GRIPP partnership has three components. Firstly the Core Group who provide technical leadership, administrative management and communication support and co-funding through its CGIAR research programmes and other activities. Secondly the Associated Partners who are long-term partners to implement joint projects, develop funding proposals, provide guidance on the overall direction and attend periodic virtual or face-to-face partner meetings. Thirdly the GRIPP Forum, a loose network of partners and individuals who have expressed interest, and would like to engage in two-way flow/exchange of information, ideas, experiences, and inputs to publications. Eighteen participants took part in the meeting, chaired by IAH's Karen Villholth. The GRIPP core partners are: International Water Management Institute (IWMI), International Groundwater Resources Assessment Centre (IGRAC), IAH, International Union for Conservation of Nature (IUCN), National Centre for Groundwater Research and Training (NCGRT, Australia), Skat Foundation (SKAT), African Groundwater Network (AGW-Net) and the Daugherty Water for Food Institute, University of Nebraska (DWFI).

The objectives of the meeting were to discuss and decide on the best strategy for UN Water involvement in GRIPP, to consolidate partnership arrangements, roles and responsibilities and to develop a work plan on knowledge and promotional outputs, upcoming partner meetings and events in 2017. It was decided that GRIPP will send a message to the High Level Panel on Water (HLPW) of UN-Water and IAH will be responsible for preparing this document, based on the IAH Strategic Overview Series, and referring to the importance of groundwater in the global water cycle and the need for UN-Water to recognize this role. New possible strategic partners were identified and the GRIPP mission, value proposition and impact pathways, as well as financing aspects were analysed. GRIPP members discussed possible future project proposals, being the first action to identify projects linked to funds or groups already working on these issues.

**ANTÓNIO CHAMBEL**



<http://gripp.iwmi.org/>

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**MAY 2017**

# LATEST IAH ANNUAL REPORT

Although a little bit late, the IAH annual report and summary of finances for 2015 is now available on the IAH website. We have adopted a similar format to the previous year, again endeavouring to produce a report which is readable and well-illustrated. We have aimed to provide the information in an accessible way by picking out key statistics and figures to show how the different parts of IAH use funds to help meet the association's educational and charitable objectives.

This year, the report highlights not only the scientific activities of our commissions and networks, but also some of the ways in which we bring groundwater science to broader audiences, through our publications, advocacy and training. As shown from the plentiful items on meetings and events throughout the report, we can all be proud of the increased activity of IAH's commissions, networks and chapters. This is due to the efforts of the many volunteers who give up so much time to participate in and support these groups. We do, of course, depend on you to provide us with these reports to keep IAH members informed and to encourage them to participate, and from which we can select material for the overall IAH summary, so please keep sending them to us!



We also report on the changing ways in which we support the growing IAH membership. In describing our finances, the continuing challenges posed by fluctuations in value of the three currencies in which we operate are highlighted and illustrated.

Links are also provided in the report to further details for those who are interested. We hope you like this approach, and we would be very happy to receive feedback.

## SECRETARIAT

 <http://bit.ly/2nguiTN>

# UPDATE: IAH MENTORING SCHEME

We are presently looking at the applications received in the 2016 call, ready to make some new “matches”, including with some of the un-allocated reserves we have been holding since the last round of registrations. Please be patient; this process takes time. Thanks to those mentors who are already actively supporting members by providing advice and the benefit of their own experience. Your help is appreciated! At present the scheme is closed to new applications - look out for further calls later in 2017.

## SECRETARIAT

 <http://iah.org/knowledge/mentoring>



# IAH SIGNS COOPERATION AGREEMENT WITH IAPG

In April IAH president António Chambel signed an agreement for cooperation with IAPG, the International Association for Promoting Geoethics. IAPG is a multidisciplinary, scientific association for widening discussion and creating awareness about problems of ethics applied to the geosciences. It has a worldwide membership network of geoscientists in more than 100 countries. Like IAH, IAPG is an affiliated organization of the IUGS – International Union of Geological Sciences and is also recognized as an International Associate Organization of the American Geosciences Institute (AGI), an Associate Society of the Geological Society of America (GSA) and an Associated Society of the Geological Society of London.

The agreement expresses a mutual desire to co-operate on a range of issues in the field of geoethics and groundwater with, in particular, the following objectives:

- promoting the principles of geoethics, research integrity and best practices in use of groundwater within their networks;
- cooperating in teaching and training events on groundwater, by introducing issues of geoethics;



- co-organising scientific and dissemination events about (geo)ethical and social implications of groundwater use;
- identifying possibilities to apply for funding for the development of common projects on geoethics and groundwater.

Both organisations will promote the involvement of their members in discussion on the ethical and social implications in the exploitation and use of geo-resources, with specific attention to groundwater and will establish a liaison link to ensure good information flow and cooperation. Look out for further news of this initiative.

**SECRETARIAT**

 <http://www.geoethics.org/>

## NEW IAH LOGOS AVAILABLE



Following the take up of our anniversary logo during 2016, for most uses we have reverted to the original without the date band, albeit in an improved digital format. For many purposes, when we use or are asked for our logo the simple shield suffices, especially where IAH is already well-known. However, when we offer or are requested use of the logo for new partners or collaborators and/or the logo is going to be displayed along with many others, then the full name of the association helps us to become better known. This was suggested by new President António Chambel at our recent Executive meeting (see page 8), and versions with the full name are now available. We have also produced a high quality black and white version, in response various requests, for use on event and other publicity, e.g. pens, T-shirts.

**SECRETARIAT**

 <https://iah.org/iah-logos>

*[continued over...]*

**MAY 2017**

# GROUNDWATER AND THE SDGs

## - NEW IN IAH'S STRATEGIC OVERVIEW SERIES

Following the success of the series of six IAH Strategic Overview Papers prepared during late 2015 and early 2016, discussions about further potential papers focussed on the relationship between groundwater and UN Sustainable Development Goals (SDGs), and in particular SDG-6 on Water. It was felt that the production of an authoritative paper on groundwater in this SDG would enable IAH to inform discussions within UN-Water, and other global fora such as the UNDP/World Bank High Level Panel on Water, on the important role groundwater plays in meeting SDG-6 Targets. It would also help to explain the conceptual and practical challenges involved in monitoring groundwater in relation to SDG Targets. As hydrogeologists we know that it is much more difficult to monitor and assess the quantity and quality of groundwater compared to surface water, but many of these complexities are not properly understood by the broader water sector.

Given the considerable effort being devoted by the UN system to defining indicators related to specific SDG Targets, it was decided in December last to proceed as quickly as possible with preparing this new paper. The same approach was adopted as for the previous six overview papers – Stephen Foster drafting an outline structure and inviting comments and contributions from a group of colleagues (selected in liaison with the IAH Executive) and Gill Tyson supporting him to bring the words and pictures together in a tight and attractive format. Excellent responses were received from the contributors, which enabled António Chambel, our new President, to present a draft at the recent UN-Water meeting in Geneva, and to discuss it individually with some members of the UN-GEMI Sub-Committee. The final version was then produced in early March.

The overview paper makes recommendations both for (a) defining new indicators of groundwater resource status and (b) for a stronger emphasis on appraisal of groundwater source design and source integrity in determining its acceptability, given the constraints on adequate field monitoring of very large numbers of sources. The recommendations have been well received and at the time of writing we are working to ensure as wide as possible dissemination of the paper.

IAH members and supporters are invited to download and use it in the same way as the other strategic overview papers in their own efforts to promote better understanding of the significance of the relationship between the long list of SDG Targets and groundwater. We would like to thank Stephen and Gill for their rapid and skilful work in coordinating the production of this paper, and also thank the many contributors.

**BRUCE MISSTEAR AND JOHN CHILTON**



<http://bit.ly/2o7foOu> (IGroundwater and the SDGs)

<https://iah.org/knowledge/learning-resources> (access all series, via IAH's Learning Resources page)





## IAH SPONSORSHIP SCHEME - SUPPORT NOW!

IAH is justly proud of its sponsored membership scheme which is now well-established and has grown substantially over the years. The Secretariat has, I believe rightly, taken the view that we should welcome into sponsored membership all who are working in or interested in groundwater as demonstrated by the brief CV which we ask for, and are keen to support our objectives.

However the burden of support for the scheme has been gradually passing from individual members to central funds, with support from IAH chapters remaining hearteningly constant. This probably reflects the tough economic times we live in, and perhaps older members who gave such support retiring and leaving the association. We would, therefore, like to take this opportunity to request members who may never have thought of this very worthwhile gesture to consider such support, either now or at the next renewal. You may choose for your sponsorship a particular colleague with whom you have worked or studied or have taught, or you can just take pot luck.

We are also in contact with some of our larger chapters to see whether they would be willing to increase their support, perhaps focussing on members in regions with which they have historical and cultural ties. Thus the Irish National Chapter has recently agreed to increase the number of members it sponsors from 4 to 10, and is presently consulting internally to decide where these should be. Similarly, the Australian and British National Chapters have agreed to increase their own sponsorship commitment, and we are discussing with them which regions or countries they would like to focus on. The cost of this is not great, and we would like to hear from any individuals or chapters who would like to increase their support for the scheme or to take on sponsored members for the first time. Please contact Sharon or Ian if you would like to discuss this.

**JOHN CHILTON**

 <https://iah.org/join-us/sponsorship-scheme>  
[info@iah.org](mailto:info@iah.org)

## NEW CORPORATE SPONSOR



We are pleased to announce that in January Van Walt became IAH's third corporate sponsor. The company is one of the leading suppliers of high quality environmental research equipment for groundwater, soil, water and sediment sampling and monitoring. At the heart of the business and what defines their approach is the choice of 'best-in-class' equipment to rent or buy and the company's values of respect, fairness and excellence. "We deliver what we promise and work with our customers to add value over and above what is expected" is their message.

From water level loggers (see advert on page 2); groundwater sampling pumps; logging stations; soil drilling and sampling; water quality meters to telemetry that supplies accurate data from on-site sensors directly to a desktop, tablet or mobile. The company looks forward to partnering with IAH and to supporting the association in this way.

*[...we are of course always on the lookout for further corporate sponsors? Would your company consider this?...ed]*

**SECRETARIAT**

 <http://www.vanwalt.com/>

*[continued over...]*

**MAY 2017**

## APPLIED HYDROGEOLOGY AWARD: CALL FOR NOMINATIONS



Readers of the December 2016 newsletter will have seen that Professor Richard Carter was the worthy first recipient of the “Applied Hydrogeology Award”; proposed as one of the activities to recognise IAH’S 60th anniversary. We are happy to announce a call for nominations for the 2017 award, which will be presented at the 44th Congress in Dubrovnik.

The same criteria will apply as last year. Thus the award will be presented to a groundwater professional who has made an outstanding contribution to the application of hydrogeology, preferentially in developing countries or in support of international development efforts. Hydrogeological problems are often discussed from an academic point of view but solutions and applications in the field usually require pragmatic thinking and sometimes unconventional approaches. The panel will give particular emphasis in their evaluation to work which has contributed to an increase in living standards in developing countries.

Any IAH member may nominate a candidate, but self-nominations will not be accepted. Proposals should reach the IAH Secretariat by e-mail ([info@iah.org](mailto:info@iah.org)) as one single pdf-file before July 1st, and should include:

- An explanatory statement by the person submitting the proposal;
- A letter of recommendation by any other supporter;
- A brief curriculum vitae of the candidate;
- A list of projects the candidate has carried out, including aims, region and period of time;
- A list of projects (planned or accepted), patents, publications or equivalent information.

The total submission should not exceed 5 pages of text in one coherent pdf-file. A panel of three appointed by Council will evaluate the proposals. We look forward to receiving your nominations and to making this new initiative a continuing success.

### SECRETARIAT

 [Submissions and queries to info@iah.org](mailto:info@iah.org)

# JOURNAL AND PUBLISHING TEAMS MEET IN GERMANY

In fine early April spring weather the HJ editorial team of Cliff Voss, Susanne Schemann and Sue Duncan joined Springer colleagues led by Carlo Schneider, Associate Publishing Editor, Sciences and Geography, in Heidelberg for their annual review meeting. It was also a good opportunity for IAH's new Executive Manager to be introduced to both teams. One of the most important items discussed was that the on-line option for journal access reached 50% of the total member circulation in 2016. Although we believe there is still a strong preference from many IAH members for a print journal, research needs to be done to ascertain individual and corporate member preferences, the geographical spread of print/online members and issues of internet access and download speeds and of reliability of postal services, and any modifications that might be needed to our fee structure. Even if the presumption switched to online access, limited print runs would be possible for archive purposes for the association and for print-preferring members, at costs to be agreed. For its part, Springer will investigate the feasibility and costs of printing smaller runs. It should be emphasised that IAH is not under immediate pressure to change, and we will be devising ways to consult widely amongst our members, which you should look out for. In the meantime, we are happy to hear your views on this.

SECRETARIAT

## CALLING POTENTIAL AUTHORS

As mentioned in the December 2016 News and Information, our publisher, CRC Press/Balkema, had applied for ISSN (International Standard Serial Numbers) at the Library of Congress for the two IAH book series, the Blue Books or International Contributions to Hydrogeology, and the Green Books, Selected Papers. We have recently heard that this has been approved and the publisher will now apply for a listing at the Web of Science. This will make the book series more attractive for academics who need to track their citation status and will make the books more overt in electronic searches.

This is excellent news for IAH and the book series, but it follows that to maintain the two as real series we need to be publishing more regularly than we have been doing in recent years. The two series, therefore, need new authors and editors to come forward with proposals. The availability of citations should be especially beneficial to academic colleagues who are always under scrutiny from their university or institute with regard to publication records. To make publishing in the IAH Book Series more attractive to potential contributors, we now offer an honorarium

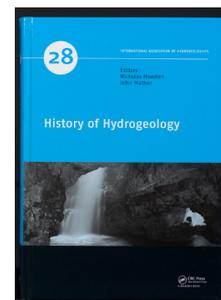
of several hundred euros which can be paid to authors and editors to help allay costs. This could be particularly attractive to authors who are retired and no longer have institutional support for such things as diagram production.

Potential authors and editors who would like to propose a new book in either series should in the first instance contact our Books Editor-in-Chief Nick Robins. Nick will be pleased to hear from you at [books@iah.org](mailto:books@iah.org) and will help prepare proposals for onward transmission to our publisher. Remember – without your support there would be no IAH Books Series and now that we have ISSN status we really do need to work hard to maintain our published output.

NICK ROBINS AND JOHN CHILTON

 <https://iah.org/iah-book-series>  
[books@iah.org](mailto:books@iah.org)

ISSN



MAY 2017

# COMMISSIONS & NETWORKS

IAH's eight commissions and six networks continue to provide the focus for much of the association's activities which contribute to the science of groundwater and to outreach, education and training. They run sessions at IAH congresses, co-convene technical meetings and field excursions with other societies, host workshops and training courses and prepare educational and outreach publications. Readers of the December News and Information will have seen the five and a half pages of news from the commissions and networks, much of it featuring meetings held, activities described and plans made during the Montpellier Congress, where a very high proportion of these groups met. There is more news in this issue of the newsletter.

While very happy with this level of activity, we are always keen to encourage more IAH members to take part in the work of the commissions and networks. However, you do not have to be an IAH member to participate. In fact we encourage wide involvement from the groundwater community, as this will help the groups to thrive and give greater authority to their work. Use the listings on the IAH website to find out more about IAH's commissions and networks and to make contact with them.

We also welcome suggestions for new topics or activities and ideas for new commissions or networks; we would like to ensure that the range of topics covered reflects the evolution of hydrogeological science and practice. Thus, ideas for future groups could include existing topics such as groundwater pollution, practical aspects of the hydrogeologist's profession such as groundwater exploration and new subjects such as emerging groundwater contaminants. As well as being the "home" for IAH's scientific activities and outputs, we could also have groups whose focus is more outwards from the core science of hydrogeology towards topics of wider importance, as reflected in our recent series of strategic overviews. The recently-established Commission on Groundwater and Energy is a good example of this. Contact us with your own ideas and comments.

**DAVE KREAMER AND JOHN CHILTON**



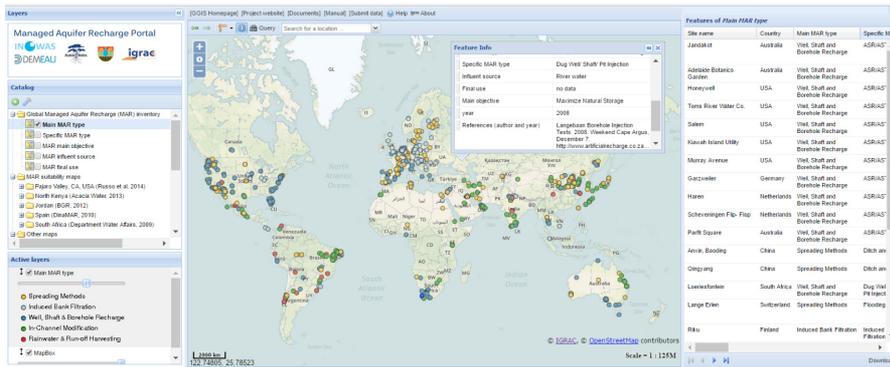
<https://iah.org/groups/commissions-networks>

Questions, ideas or comments? email [info@iah.org](mailto:info@iah.org)



Our Regional Groundwater Flow Commission co-organised a session in Vienna at EGU General Assembly 2016 titled "Groundwater vulnerability and circulation" with 6 oral presentations and 17 posters. Chair Jim LaMoreaux and co-chairs Manuela Lasagna, Daniela Ducci, Bartolomé Andreo-Navarro, Judit Mádl-Szönyi and Xiao-Wei Jiang coordinated the session highlighting the role of regional groundwater flow in vulnerability assessment and also social and economic aspects.





## COMMISSION ON MANAGING AQUIFER RECHARGE

The International Groundwater Resources Assessment Centre, Netherlands (IGRAC) and the Technische Universität Dresden, Germany (TUD) officially launched the “Global MAR Portal” at the 9th International Symposium on Managed Aquifer Recharge (ISMAR9) in June 2016 in Mexico City. During a dedicated workshop organised under the IAH-MAR Commission and chaired by Peter Dillon (Australia), Catalin Stefan (TUD) and Nienke Ansems (IGRAC) introduced the global MAR inventory and the functionalities of the MAR portal. The joint UNESCO-IAH workshop aimed at harmonising data and encouraging new contributions to enable expansion of the inventory (new MAR sites and suitability maps are uploaded to the portal as they come available). The portal is based on a web-GIS system that includes detailed information of about 1,200 case studies on managed aquifer recharge (MAR) around the world, as well as regional MAR suitability maps. The inventory contains information on site name, location, MAR type, year when the scheme came into operation, the source of infiltration water, the final use of abstracted water, and the main objective of the MAR scheme, with more parameters and functionalities to be added in the future.

### CATALIN STEFAN AND NIENKE ANSEMS

 <http://marportal.un-igrac.org>  
<https://recharge.iah.org/>

## BURDON GROUNDWATER NETWORK FOR INTERNATIONAL DEVELOPMENT

### IAH free book scheme underway for 2017

IAH-BGID is working to finalize the free book scheme for all sub-Saharan Africa members, thanks to the precious help of one of the network’s members, Bob di Filippo (PhD Research Student at the School of Civil and Building Engineering of Loughborough University, UK). The aim of this scheme is to increase access to hydrogeological books for IAH members in Africa where it is difficult to obtain reference books, or reliably access the web. This is a much-appreciated activity undertaken previously by the network, but not for several years. More information is available on the website.

[... While we have adequate resources within the Burdon Fund

*for this, we are looking to commercial sponsorship for help to support this activity, and would also encourage IAH chapters and members to do so as well... ed...]*

### IAH-BGID goes social

Check out our new twitter account @IAH\_BGID ! We encourage you all to share information and interact with us -and the other IAH networks/chapters - to strengthen the connections between hydrogeologists worldwide!

### VIVIANA RE, ALAN MACDONALD, AND TAMIRU ABIYE

 <https://burdon.iah.org/>  
 @IAH\_BGID  
 iah.bgid@gmail.com

## A NEW CHAPTER FOR MONGOLIA



We are pleased to announce the establishment of an IAH Chapter in Mongolia. Mongolian members of IAH organised the first meeting to set up a chapter at the end of January at the Mongolian University of Science and Technology in the capital Ulaanbaatar. Eleven participants from the Agency for Land Administration and Management, Geodesy and Cartography, Mongolian University of Science and Technology, National University of Mongolia, and several private companies participated in the meeting and discussed the mission, aims and plans of the new chapter.

The new Mongolian Chapter will aim to provide a platform for all hydrogeologists working in Mongolia and others who have an interest in groundwater related issues, for networking and professional interchange. The chapter will focus on cooperation with other chapters of IAH as well as to support Mongolian early career hydrogeologists to contact and become involved in IAH activities. The schedule of regular activities of the chapter will include a variety of weekly seminars, talks, lectures and technical discussion meetings for hydrogeologists to increase knowledge and improve the understanding of groundwater by engineers, which is held once in a week by the young hydrogeologists club in Ulaanbaatar. There are also plans for an international hydrogeological conference and fieldtrip once every two years.

The meeting participants elected Assistant Professor N. Buyankhishig, Deputy Director at the School of Geology and Mining of the Mongolian University of Science and Technology as president of the chapter and Mrs D. Altantungalag from the National University of Mongolia as secretary. The picture shows the participants at the meeting.

We wish them all success and look forward to supporting the new chapter in its activities.

JOHN CHILTON



## Germany

### Tribute to seven former chapter presidents

The 60th anniversary of IAH provided a good opportunity to give recognition to those who have been members of IAH for a long time and have actively served their national chapter and its committee especially well, sometimes over many years. In this spirit, the German chapter decided to honour five former presidents of the chapter who had also been IAH members for more than 25 years (Millennium Members). These are Wolfgang Langguth (president of the German chapter of IAH from 1970 to 1982), Gottfried Goldberg (1982 to 1986), Klaus-Peter Seiler (1986 to 1990 and from 1998 to 2001), Heinz Hötzl (1990 to 1994), and Eckard P. Löhnert (1994 to 1998).

These colleagues initiated the foundation of the German IAH chapter and thus fostered international cooperation in hydrogeology. Also, the long-standing good collaboration between the German IAH chapter and the national Expert Group of Hydrogeology in the German Geological Society (FH-DGGV) is based on their work during the early years of the German chapter. All of them received framed Certificates of Appreciation, which arrived just before Christmas. These tributes are also an opportunity to commemorate those former presidents of the German chapter who passed away, Hans-Joachim Martini, Hanspeter Jordan and Matthias Eiswirth. The German hydrogeological community pays respect to their merits for international hydrogeology.

In the same spirit, the German chapter used the opportunity to also honour two of its former presidents who are not millennium members, but have served the IAH community in Germany with exceptional personal and professional commitment: Thomas Himmelsbach and Willi Struckmeier. Thomas was the president of the chapter from 2004 to 2014 and invested time and enthusiasm in running the chapter. Willi, although not a former president of the German chapter, intensively helped the current board in setting up the new national association, just to name one of the many missions he was committed to during the last years.

On behalf of the German IAH chapter we would again like to thank all these pioneers of international hydrogeology for their exceptional services. The photo shows Thomas Himmelsbach with Christoph Neukum (treasurer) and Judith Flügge (secretary).

JOHANNES BARTH, CHRISTOPH NEUKUM AND JUDITH FLÜGGE



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



## Thailand

### February meeting held

The Thai Hydrogeologists Association held a meeting in Bangkok in February to discuss the topic “Thai water well drilling companies: classification and grouping” which was followed by a presentation “How Thai hydrogeologists and drillers can support national policy on water security in the future”. Around 60 hydrogeologists and drillers attended. A key positive outcome is that groundwater will be an alternative choice for water security in Thailand in the next decade. Ms Somkid Buapeng, former Director General of the Department of Groundwater Resources and President of Thai Hydrogeologists Association (HAT) chaired the event.

 [sbuapeng@hotmail.com](mailto:sbuapeng@hotmail.com)

*[continued over...]*

## CHAPTER NEWS

[...continued from previous]



### Portugal

#### IAH 60th Anniversary Celebrations

In November 2016 the Portuguese Chapter joined the celebrations of IAH's 60th Anniversary. The event brought together several generations of hydrogeologists, colleagues, friends, teachers and students and was organized together with the New University of Lisbon in Caparica, south of Lisbon. The afternoon event started with a Lesson in Hydrogeology, a project recently created by the Portuguese Chapter that aims to present each year a case study in the different Universities from the North to the South of Portugal, challenging students to open their minds and their critical senses when confronted with real case studies. Afterwards, a well-recognized and respected retired hydrogeologist, Carlos Calado, presented his remarkable investigations of mineral and thermal waters in Portugal.

A special tribute was organized to honour Albino Medeiros, also a well-recognized hydrogeologist in Portugal, for his career and dedication to working on the link between groundwater and engineering works. This career started when he was a young boy of only 13 years, working as a servant in one of the biggest engineering companies in Portugal. Later, by studying after hours, he specialized in groundwater prospecting, well construction and issues

connecting groundwater and engineering works, in the same private company and later on creating his own company. He was also a respected teacher at the New University of Lisbon.

The half day event also included a small session on the history of IAH and the day finished with other tributes. In the context of the IAH anniversary, the members who created the Portuguese Chapter in 2002 were recognized and the Portuguese members with more than 25 years of IAH membership were honoured.

#### RAQUEL SOUSA AND ANTÓNIO CHAMBEL



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

**YOUR FLAG  
HERE!**

### No chapter for your country or region?

IAH is always keen to establish more chapters and it may be that we have other interested individuals in your country or region hoping to establish one. Recent country additions include Turkey and Iraq with more under discussion. IAH provides full information and support to help guide you in the process. Chapters retain 10% of the IAH membership fee to help support their own activities, which include technical meetings, field visits and social events, and many even collect fees in local currency for the convenience of their members. National chapter committees are run on a voluntary basis by members and we are very grateful for their efforts.

#### SECRETARIAT



Questions or comments? Email [info@iah.org](mailto:info@iah.org)



[www.facebook.com/iah.org](https://www.facebook.com/iah.org)

# KINDRA PROJECT LAUNCHES THE EUROPEAN INVENTORY OF GROUNDWATER RESEARCH



## Final year work focusing on gap and trend analysis

The European Inventory of Groundwater Research (EIGR) is now open and allows users to showcase their research to the community of professionals actively contributing to the European water sector. The EIGR is a tool which allows for the inclusion of a wide range of information sources, ranging from scientific papers, hydrogeological maps, technical reports, book chapters to position papers. The opportunity of including research in the KINDRA EIGR offers the following added value:

- A platform to make your contribution visible through the first on-line tool exclusively dedicated to groundwater research & knowledge;
- Promote networking amongst professionals who are interested in or focusing on similar topics;
- Help classify research articles, products, papers and projects throughout the community;
- Making community contributions available for database analysis to support the implementation of EU policies and Water Directives.

The current version of the inventory contains more than 2000 metadata records referring to or providing links to groundwater research carried out in Europe since 2000. These records have been compiled by experts of the EFG national member associations who have collated information from diverse sources, consulting at national level the relevant reports and databases from universities, research centres, government bodies, regional and local administrative offices and other parties involved in groundwater research.

Efforts throughout 2017 will focus on carrying out a trend and gap analysis to identify and suggest specific recommendations for the update and progressive development of research and innovation agendas, in accordance with the Water Framework Directive.

Access the EIGR through the website. For further details of our activities, please follow us on social media or join our LinkedIn group: KINDRA project.

**ADRIENN CESKO**



 [www.kindraproject.eu](http://www.kindraproject.eu)



# NEW MEMBERS

A warm welcome to the following new members who joined our Association in the period 26 October 2016 - 31 March 2017:

## AUSTRALIA

Khalid ABUBAKER  
Sneha BHATTACHAN  
Ian CALLOW  
Tyson CLINGAN  
Brendan DIMECH  
Ashley DYSON  
Ms Trine ENEMARK  
Mr Alessandro FELCI  
Kirsten FENSELAU  
Giovanni FIRMANI  
James GLOVER  
Penelope GODWIN  
Nardine HABNER  
Cameron HALL  
Allan HANSEN  
Mark HASSAM  
Julia JASONSMITH  
Ryan JUDD  
Eamon LAI  
Louise LENNON  
Tracey MAIN  
Mr Santiago MARIN  
Mr Timothy MCMILLAN  
Kane MITCHELL  
Aidan MOYSE  
Mr Tim MURPHY  
Mr Robert NELSON  
Mr Masoud NEMATI  
Jackson NEWTON  
Dr Des OWEN  
Ms Amy PERRIN  
Coby PYMBLE-WARD  
Ms Carolina SARDELLA  
Mr Jim STANLEY  
Yuqi TAN

## BANGLADESH

Mr Syed MUSTAFA

## BELGIUM

Mr Youcef BOUDJANA  
Agathe DEFOURNY  
Issoufou OUEDRAOGO

## BOLIVIA

Ms Veronica MAMANI

## BRAZIL

Prof Paulo Pontes ARAÚJO  
Dr Paulo GALVÃO  
Mrs Vanessa GODOY

## BULGARIA

Peter N GERGINOV

## CANADA

Pana ATHANASOPOULOS  
Ms Ismena BYSTRON  
Mr Wesley CAMPBELL  
Alexia CARPENTIER  
Bekalu ERKABU  
Matthew FRIEND  
Mr Francois HUCHET  
Dr Mahmoud HUSSEIN  
Miad JARRAHI  
Mrs Celia KENNEDY  
Paul KOBLER  
Mr Zach KUSZCZAK  
Mr Marc LAURENCELLE  
Matthew LONG  
Alexandre MARTIN  
Tatjana MILOJEVIC  
Ms Kayla MOORE  
Ms Samantha MORGAN  
Mr Christopher MORGAN  
Mr John MOSQUERA  
Mr Garry PRINGLE  
Mr Micha ROEMER  
Mr Matthew SIMONS  
Mr Joshua SIMPSON  
Simratpal SINGH  
Mr Daniel SKOREYKO  
Mrs Sylvia SUSANTO  
Rebecca TURLEY  
Xiang WANG  
Zijian WANG  
Mr Michael WELDON  
Hugh WHITELEY

Andrew WIEBE

Anne WOZNEY  
Ziyang ZHANG

## CHILE

Pia Ávalos ESCOBAR  
Danilo Bruna CABRERA  
John MCCARTNEY  
Juan Pablo Riquelme MORAGA

## CHINA, PEOPLE'S REPUBLIC OF

Mr Abubakari ALHASSAN  
Prof Wenke WANG

## COLOMBIA

Miss Maria Cristina ARENAS BAUTISTA  
Miss Laura C CACERES TORRES  
Mr Jonathan Andres DIAZ  
Hector Andres OCAMPOS CHAPARRO  
Miss Maryory PANTEVIS GIRON  
Miss Maria Victoria PEREZ INOCENCIO  
Mr Santiago Andres PIMIENTO  
Mr Harold Robinson PLAZAS MARTINEZ  
Mr Jonathan Steven RIVERA  
Mr Bryan SANABRIA LOMBANA  
Miss Angelly Fiorella SERJE  
Mr Luis Fernando SILVA VARGAS

## COSTA RICA

Mrs Marta CHAVES

## ETHIOPIA

Yehualaeshet TADESSE

## FINLAND

Anna JAROS

## FRANCE

Michel AUBERGER  
Romane BERTHELIN  
Arneaud BERTHOUD  
Jordan BROYER  
Louis CABOT  
Alizée CARDINAL  
Cyrielle CENDRIER  
Dr Jean-Baptiste CHARLIER

Maia DA SILVA

Cécile DANIEL  
Ms Marguerite de CHAISEMARTIN  
Nicolas DI MARTINO  
Margaux DUPUY  
Jonathan GALLOIS  
Gaelle GAULTIER  
Mr Mahmoud KHASKA  
Ms Corinne LEGAL-LASALLE  
Florence LENHARDT  
Mr Hubert MACHARD DE GRAMONT  
Romain MARTIN  
Nicolas MAURILLON  
Dr Hélène MICHE  
Gaspard NOUGARET  
Mr Maxime PHILIBERT  
Alexandre PRYET  
Mr Fabrice QUIOT  
Florian RAOULT SATORRES  
Ms Lara SASSINE

## GERMANY

Ms Wencke APPEL  
Mr Zhao CHEN  
Mr Michael HORF  
Mr Stefan KLINGLER  
Jana SALLWEY  
Mr René ZAHL

## GREECE

Dr Nerantzis KAZAKIS

## HUNGARY

Ms Zsófia BUSA  
Katalin CSONDOR  
Mr Márk SZIJÁRTÓ  
Virag TOROK

## INDIA

Mrs Sheena AD  
Prof Ramanathan AL  
Mr V RAMARAJU ANGALAKUDURU  
Dr Debabrata DAS  
Dr Yogendrasinh JADEJA  
Mrs Dhanya NARAYANAN



Mr Rudra Mohan PRADHAN  
Mr AMIT KUMAR SINGH  
Dr K SREELASH  
Dr Srinivasa MURTHY

**INDONESIA**  
Mr Fikri Noor AZY

**IRAQ**  
Mr Fouad SAEED

**IRELAND**  
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Ms Grainne BARRON  
Mr Paul CONAGHAN  
Ms Kate CORCORAN  
Dr Lea DURAN  
Mr Michael GALLAGHER  
Miss Clodagh GILLEN  
Mr Eoin MCALEER  
Mr Niall MEEHAN  
Ms Fani PAPAGEORGIOU  
Mr Maxime SAVATIER  
Ms Leticia Teixeira Palla BRAGA  
Mr Warren VOKES

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Chiara CALLIGARIS  
Dr Federico CERVI  
Dr Mattia De CARO  
Giorgio DE GIORGIO  
Dr Chiara MARCHINA  
Arianna MUSACCHIO  
Mr Alessandro PARISI  
Giovanni PORTA  
Dr Laura SANNA  
Mr Andrea TAMBURINI  
Dr Isotta VISPI  
Chiara ZANOTTI

**JAMAICA**  
Ms Camile CLARKE

**LEBANON**  
Mr Yusuf AL-MOOJI

**MALAYSIA**  
Mr Muhammad F Z ABEDIN

**MEXICO**  
Esther Galicia HERNÁNDEZ  
Silvana Marisa Ibarra MADRIGAL  
Gonzalo Hatch KURI

Lina Victoria Urueta PINEDA

**MOROCCO**  
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Jamal CHAO  
Mokhtar EI KANTI  
Karim EI MORABITI  
Abdessadek HADRI  
Mohammed HSSAISOUNE  
Abdessadek NRHIRA  
Saadia OUMHIJANE  
Faima Zafra TABYAOUI

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Ms Sruthi SATHYADEVAN

**NEW CALEDONIA**  
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**NEW ZEALAND**  
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Dr Clinton RISSMANN  
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**SENEGAL**  
Fatou Diop NGOM

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Mihailo SEVIC  
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Dr Abdelaziz KHAMIS

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Dr Sihem BENABDALLAH  
Dr Maroua BOUTEFFEHA  
Mohamed DHAOUI  
Miss Randa DZIRI  
Mekki HAMZA  
Mrs Rim IBRAHMIA  
Manel JOUINI  
Rachid KHANFIR  
Dr Fethi LACHAAL  
Miss Ameur MERIEM  
Dr Manel MOSBAHI

Dr Rachida MOUHLILA  
Hela NEJI  
Fatma RAJHI  
Dr Gafrej RAOUDHA  
Mounira ZAMMOURI  
Nesrine ZEMNI

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Mr Andrew APANASIONOK  
Mr Enrique CALONGE  
Mrs Yvonne COONAN  
Miss Rachael FLETCHER  
Ms Lorraine GASTON  
Mr Simon GIBBONS  
Mr Kagan HIBBERT  
Dr Ric HOROBIN  
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Mr Lewis IRVINE  
Ikky IZAGAREN  
Mr Donald ROBERTSON  
Mr William SARBUTTS  
Kayleigh SMITH  
Mr Vincent VAN WALT  
VAN WALT LTD (c)  
Miss Angela VIVEROS-LOPEZ

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Mr Frank BREEN  
Dr James CALLEGARY  
Dr Steven CARROLL  
Mackenzie CREMEANS  
Mr Jesse CREWS  
Ben CURRENS  
Rick DEVLIN  
Mrs Rachel DILLY  
Dr G. Shay FOUT  
Prof Terry HAZEN  
Kalle JAHN  
Mr Marc KILLINGSTAD  
Ms Kathryn KRUEGER  
Andrew LUHMANN  
Mr Lukas MCNABOE  
Andrew RENSHAW  
Mr Christopher SHULER  
Reza SOLTANIAN  
Nathan YOUNG

**ZIMBABWE**  
Kuzivakwashe Patrick NYARUGWE

*NB: Those marked (c) are new IAH corporate members.*

# 44TH IAH CONGRESS



Groundwater  
Heritage & Sustainability

## Update from Croatia

Preparations by the Croatian National Chapter for the 44th Congress “Groundwater Heritage and Sustainability” (25-29 September 2017) are now moving into their final months. By the time you read this, the abstract deadline will have passed and IAH Secretary General Bruce Misstear will have made a short liaison visit to Croatia to provide support and advice to the organising committee. The scientific committee will be in the process of reviewing the abstracts received and advising authors of the outcome.

The congress is to be held at the Dubrovnik Palace Hotel which nestles on the scenic seafront between a pine forest and the turquoise coastal waters of the Lapad Peninsula and just a few minutes’ by car or bus from the medieval Dubrovnik Old Town. The city of Dubrovnik is the jewel of Croatian tourism, occupying a spectacular location on the eastern Adriatic coast and was declared a World Heritage Site by UNESCO in 1979. Dubrovnik is also, without doubt, one of Europe’s most fashionable conference destinations.

The organising committee has established nine main topics under the congress theme: 1) Groundwater heritage - passing benefits to current and future generations; 2) Sustainable management of groundwater resources - Special subtopic: Sustainable Management of Groundwater Resources in Central Europe – 3rd IAH Central European Groundwater Conference; 3) Groundwater modelling; 4) Groundwater monitoring - new approaches; 5) Groundwater in karst systems; 6) Island and coastal hydrogeology; 7) Groundwater and dependent ecosystems; 8) Hydropower and geothermal energy; 9) Mineral waters and human health.

Five pre-congress courses have now been confirmed: 1) Water resources management and engineering challenges in karst aquifers, 2) Theory and practice of artificial tracer experiments in groundwater, 3) Groundwater remediation: From hydrogeologic site concepts to applied numeric models, 4) KARSYS, KarstALEA and KarstMOD: applied and innovative methods for the management of karst environment and 5) Applied groundwater modelling using Visual MODFLOW Flex. Further details of these are now available on the congress website.

Mid-congress excursions are being planned to several hydrogeologically-diverse and interesting localities, including the Dubrovnik hinterland, the beautiful islands of the Elafiti archipelago and the Mljet National Park. Details have now been firmed up for four post-congress excursions which will offer a chance to visit to some of the most famous localities in the Dinaric karst including the Jadro spring which is used to supply Split, the Plitvice Lakes National Park (tufa barrier lakes), the Blue and Red Lakes (famous sinkholes) and the Buna Spring (the largest karst spring in the Dinarides) and other localities. Details of all of these are now available on the congress website.

The patronage of the President of Croatia has been confirmed and the committee are in discussion with other potential supporters and sponsors. The community of Croatian hydrogeologists invites colleagues to attend the congress and share their ideas, experiences and knowledge. We all look forward to seeing you there!

 Congress website - <http://iah2017.org/>



## 2017 - SELECTION

 5-7 June – Chaves, Portugal

[GwFR2017: International Conference on Groundwater in Fractured Rocks](#)

Fractured Rock Hydrogeology - including a session in honour of Jiri Krásny. The conference aims to bring together groundwater specialists in fractured rocks from around the world and will have a session dedicated to honour the memory of our colleague Jiri Krásny, who was the main inspiration for these meetings and was the founder of the IAH Commission which was the predecessor of the present Network. Organised by IAH Network on Fractured Rock Hydrogeology, the IAH Portuguese and IAH Spanish National Chapters.

<https://portugal.iah.org/gwfr2017>

 14-16 June – Cagliari, Italy

[Flowpath 2017](#)

National Meeting on Hydrogeology. The objectives of the conference are: a) to promote dialogue and exchange of scientific knowledge among young hydrogeologists; b) to deepen the theoretical and practical aspects of our understanding of groundwater; c) to update all stakeholders, researchers and professionals on recent challenges in the hydrogeological sciences; and d) to encourage researchers, professionals and administrators to contribute to the improvement of water resources management. Organised by IAH Italian Chapter and the Department of Chemical and Geological Sciences, University of Cagliari.

Website: <http://convegna.unica.it/flowpath2017/>

 26-28 June – Calgary, Canada

[Characterising regional groundwater flow systems: Insight from practical applications and theoretical development](#)

This international symposium will examine the current state of the regional groundwater flow concept, discuss any recent theoretical advancement, and share experiences from applications spanning energy exploration to environmental management. The symposium will also have two optional 1-day field excursions in southern Alberta to learn more about the history of Canadian hydrogeology and hydrocarbon exploration. Hosted by the IAH Canadian National Chapter, and organised by the IAH Commission on Regional Groundwater Flow in cooperation with the IAH Commission on Groundwater and Energy.

<http://regionalgwflow.iah.org/activities/calgary-symposium-2017>

 26-29 June – Zadar, Croatia

[Man and Karst 2017](#)

The aim of this meeting is to gather scientists dealing with wide range of topics related to karst. The meeting will be organized as series of sessions with keynote lectures and selected lectures within each session. Lectures will be followed by field excursions (see preliminary programme). Topics of the meeting will include: karst morphology, karst hydrology and water protection, caves, protection of karst areas, living on karst (culture, agriculture...). Organised by University of Zadar, University of Montenegro, Centre for Karst Speleology Sarajevo, Bosnia and Herzegovina, the Karst Commission of IGU and the IAH Commission of Karst Hydrogeology.

Website: <https://manandkarst2017.wixsite.com/manandkarst2017>

 <http://iah.org/events>

For a fuller list of conferences, events and meetings and to submit an event

# PICTURE OUR IAH



It's back! Win £100\* with our competition

We continually need to add to our library of photos and over the years have come to realise that the best way of picturing our Association at work is by asking our members. Our Association has to reach out world-wide, to individuals speaking different languages and with different needs and priorities; so often a picture can express something more effectively than words.

We are therefore happy to bring back our photo competition “Picture our IAH”, with submissions invited for the following four categories:

1. **Sharing knowledge:** e.g. discussions amongst or someone teaching a group of professionals, students, a team, working to help a community, etc...
2. **Working on-site:** e.g. field work, engineering efforts, working commercially...
3. **IAH “family album”:** e.g. chapters, commissions and networks, meetings/events, well-known colleagues...
4. **The wonder of groundwater:** e.g. scenic photographs, groundwater being put to good use...
5. **Digital world:** e.g. display of software or graphics in practical use, satellite imagery, 3D models of aquifers, office-based hydrogeologists hard at work...

Winners from each category will receive £100 (or euro/dollar equivalent)\* and a free IAH book of his or her choice. The winning photographs will be used in IAH web and printed material.

## Entry information

This competition is open to all IAH subscribed members (2017 dues paid), with the exception of the current IAH Council and the IAH Secretariat. Entrants may submit up to 2 images for each category and may submit in more than one category, but with a total of no more than 5 images.

High (print) quality images, in colour, should be zipped and sent to [info@iah.org](mailto:info@iah.org). Please give your full contact details and membership number and provide a brief explanation about your photo(s).

The winning photographs will be used for IAH-related publications and its website. IAH will therefore take it in good faith that entrants have considered copyright and privacy issues prior to submitting photographs.

The closing date for entries is 31st August 2017. Winners will be notified by the end of October, and will be announced on the IAH website and in the December edition of News and Information.

## IAH SECRETARIAT



**Entries or questions?** Email [info@iah.org](mailto:info@iah.org)

\* Prize winners will be paid via Paypal where at all possible. Those living in countries/regions where Paypal is not available may be offered alternative method. This is at the discretion of IAH's Secretariat and would be in agreement with the prize-winning individual.

