Dear Ladies and Gentlemen, dear MAR family, good morning!

Please, have a look on these MAR pieces of news for 2023 December

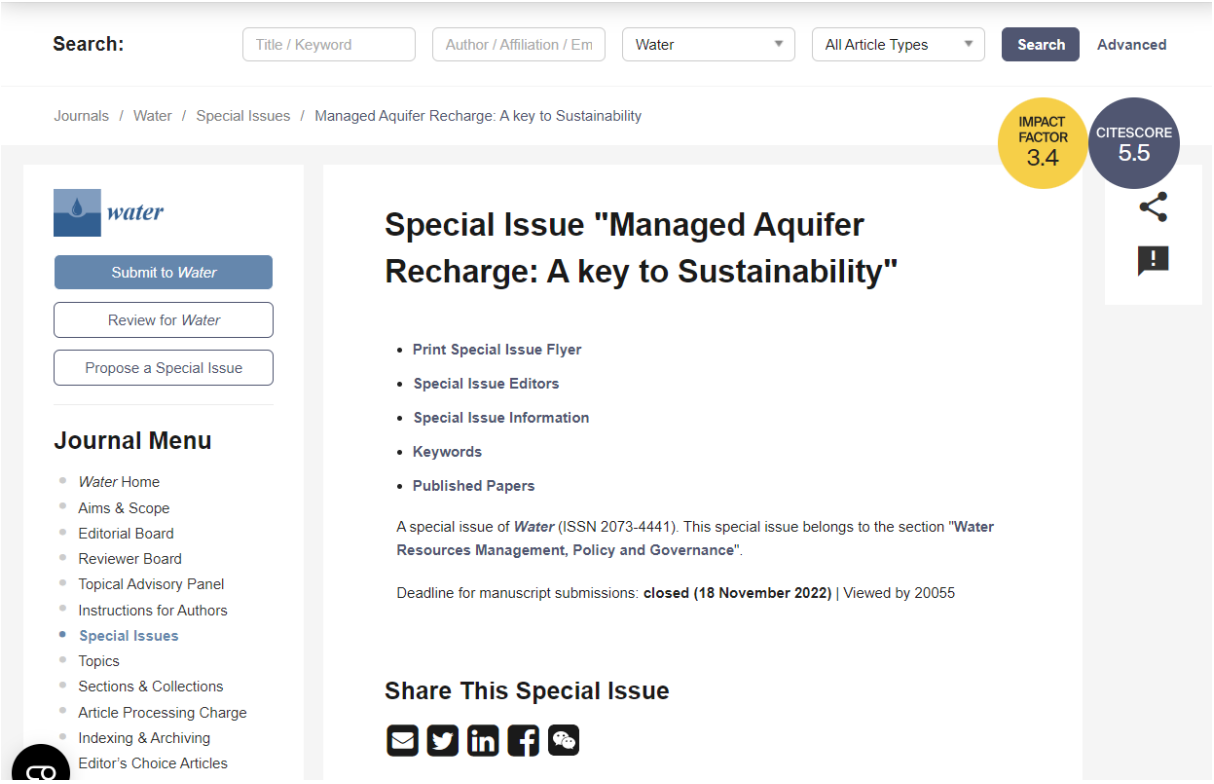
IAH MAR Commission Newsletter. 2023 December

INDEX:

PUBLICATIONS ABOUT MAR

Managed Aquifer Recharge. A key to sustainability

Selected papers on MAR, specially presented at ISMAR 11, are published in this Special Issue of the open-access Journal WATER. Ten papers have been published, including an editorial paper.



https://www.mdpi.com/journal/water/special_issues/Aquifer_Recharge.

IAH-MAR co-chairs start exploring another editorial for the future ISMAR 12´s special issue.

NEW MAR-RELATED PUBLICATIONS

IAH´s December Newsletter

IAH´s December newsletter is now online. Oddly enough there are almost zero news from the MAR Commission.

IAH MAR Co-chairs will explore how to engage more with IAH Executive.

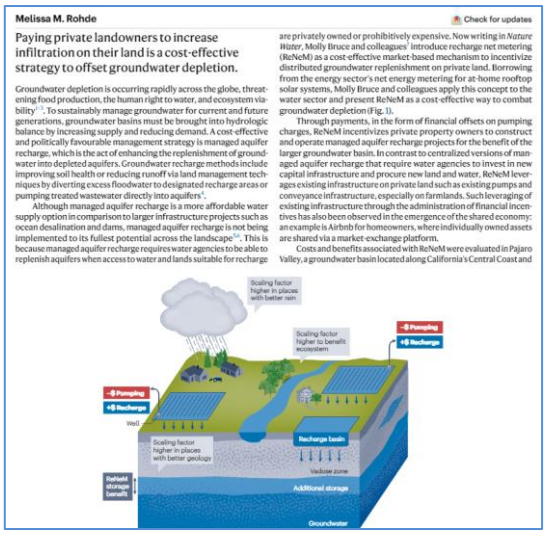
https://iah.org/wp-content/uploads/2023/11/IAH-Newsletter-Winter-2023-Web.pdf

Please, consider possible news articles for future editions.
To contact IAH Executive:
info@iah.org
www.iah.org

News and Views feature highlighting the Recharge Net Metering incentive scheme

Financial incentives can leverage existing infrastructure to replenish groundwater.

Groundwater depletion is occurring rapidly across the globe, threatening food production, the human right to water, and ecosystem viability…



Melissa M. Rohde

Check for updates

Paying private landowners to increase infiltration on their land is a cost-effective strategy to offset groundwater depletion.

Groundwater depletion is occurring rapidly across the globe, threatening food production, the human right to water, and ecosystem viability[1–3]. To sustainably manage groundwater for current and future generations, groundwater basins must be brought into hydrologic balance by increasing supply and reducing demand. A cost-effective and politically favourable management strategy is managed aquifer recharge, which is the act of enhancing the replenishment of groundwater into depleted aquifers. Groundwater recharge methods include improving soil health or reducing runoff via land management techniques by diverting excess floodwater to designated recharge areas or pumping treated wastewater directly into aquifers[4].

Although managed aquifer recharge is a more affordable water supply option in comparison to larger infrastructure projects such as ocean desalination and dams, managed aquifer recharge is not being implemented to its fullest potential across the landscape[5,6]. This is because managed aquifer recharge requires water agencies to be able to replenish aquifers when access to water and lands suitable for recharge are privately owned or prohibitively expensive. Now writing in *Nature Water*, Molly Bruce and colleagues[7] introduce recharge net metering (ReNeM) as a cost-effective market-based mechanism to incentivize distributed groundwater replenishment on private land. Borrowing from the energy sector's net energy metering for at-home rooftop solar systems, Molly Bruce and colleagues apply this concept to the water sector and present ReNeM as a cost-effective way to combat groundwater depletion (Fig. 1).

Through payments, in the form of financial offsets on pumping charges, ReNeM incentivizes private property owners to construct and operate managed aquifer recharge projects for the benefit of the larger groundwater basin. In contrast to centralized versions of managed aquifer recharge that require water agencies to invest in new capital infrastructure and procure new land and water, ReNeM leverages existing infrastructure on private land such as existing pumps and conveyance infrastructure, especially on farmlands. Such leveraging of existing infrastructure through the administration of financial incentives has also been observed in the emergence of the shared economy: an example is Airbnb for homeowners, where individually owned assets are shared via a market-exchange platform.

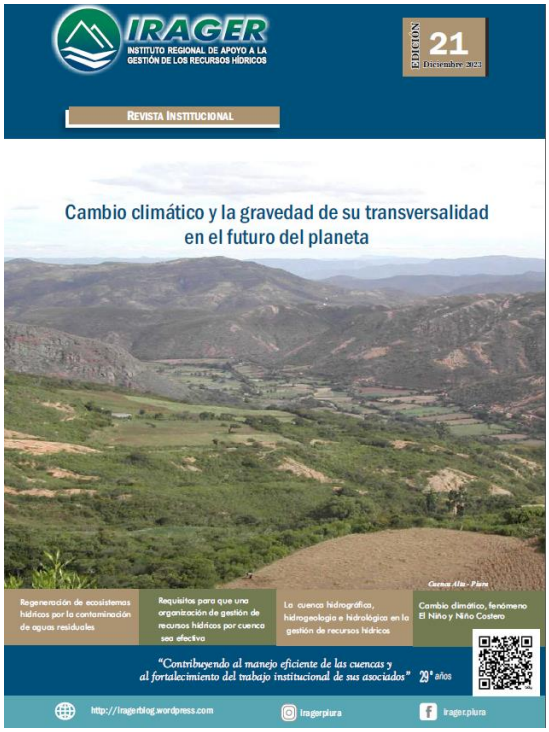
Costs and benefits associated with ReNeM were evaluated in Pajaro Valley, a groundwater basin located along California's Central Coast and

Thank you Michael Kiparsky and Melissa Rohde for informing.

Cambio climático y la gravedad de su transversalidad en el futuro del planeta (in Spanish)

IRAZER magazine has published their 21st edition.

Las cuencas son territorios que proveen una variedad de servicios ambientales, sociales y económicos…

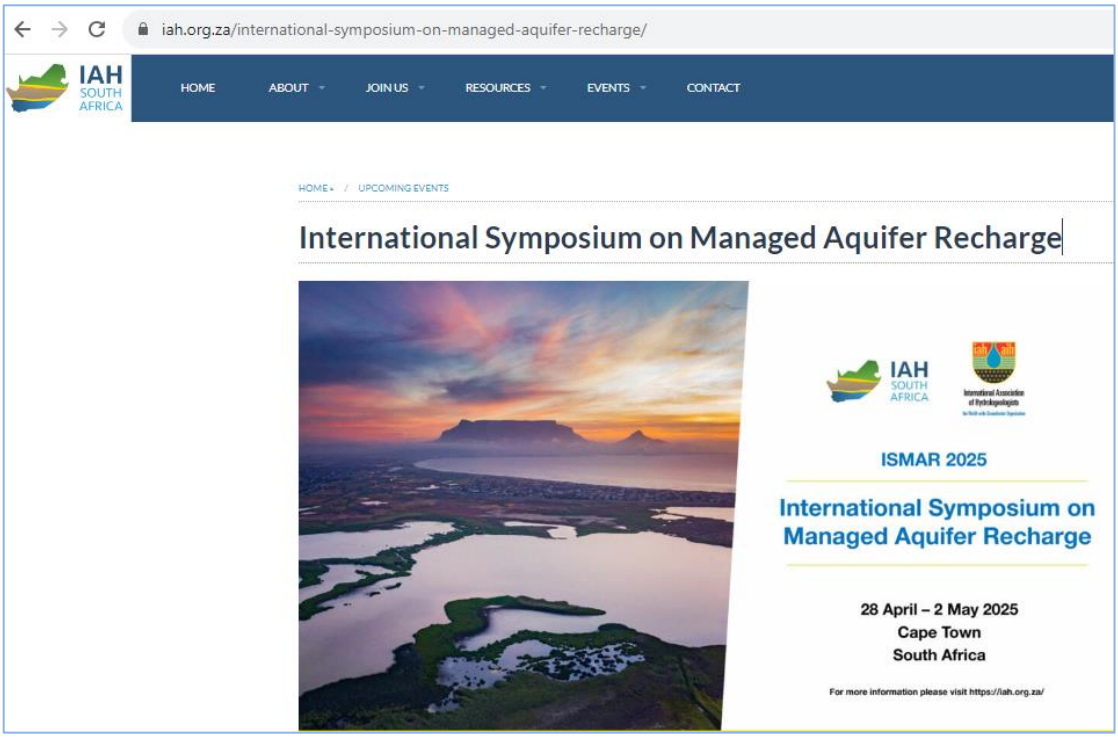


https://examplewordpresscom8963.wordpress.com/revista-irager-edicion-21-diciembre-2023/

MAR AND MAR-RELATED CONFERENCES AND SEMINARS

ISMAR 12. The IAH-MAR´s main conference is approaching

There is a section of the IAH South Africa website with some information on the International Symposium on Managed Aquifer Recharge that will be held in South Africa in April-May 2025.

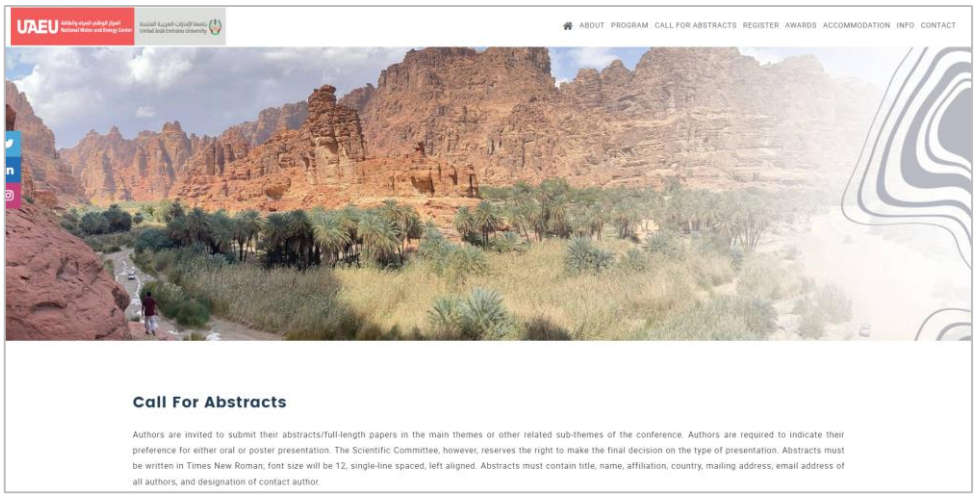


Take a look at it and start preparing for the largest event of the MAR community!

More info: https://iah.org.za/international-symposium-on-managed-aquifer-recharge/

Second International Conference on "Water Resources Management and Sustainability: Solutions for Arid Regions", 26-28 February 2024, Dubai, United Arab Emirates

The conference includes a sub-theme entitled: Advanced Technologies in Water Resources Management *(Large Scale Water Management, ASR, MAR)*



Submission deadline has expired. Contact organizers for more info at: https://conferences.uaeu.ac.ae/warms2024/en/index.shtml

The next BSMAR Symposium will take place in Arizona from April 3-6, 2024!

BSMAR 18 Symposium will take place in Arizona from April 3-6, 2024! This is your chance to showcase MAR research, connect with experts, and learn about groundwater innovations.

More info: https://ahssymposium.org/bsmar/abstracts/
Thank you Adam Hutchinson for reporting

IAH 2024 Conference. Davos, Switzerland

The IAH 2024 conference will take place in Davos, 2024, September 8-13th.

The IAH-MAR Commission co-chairs have already proposed a specific session on MAR.

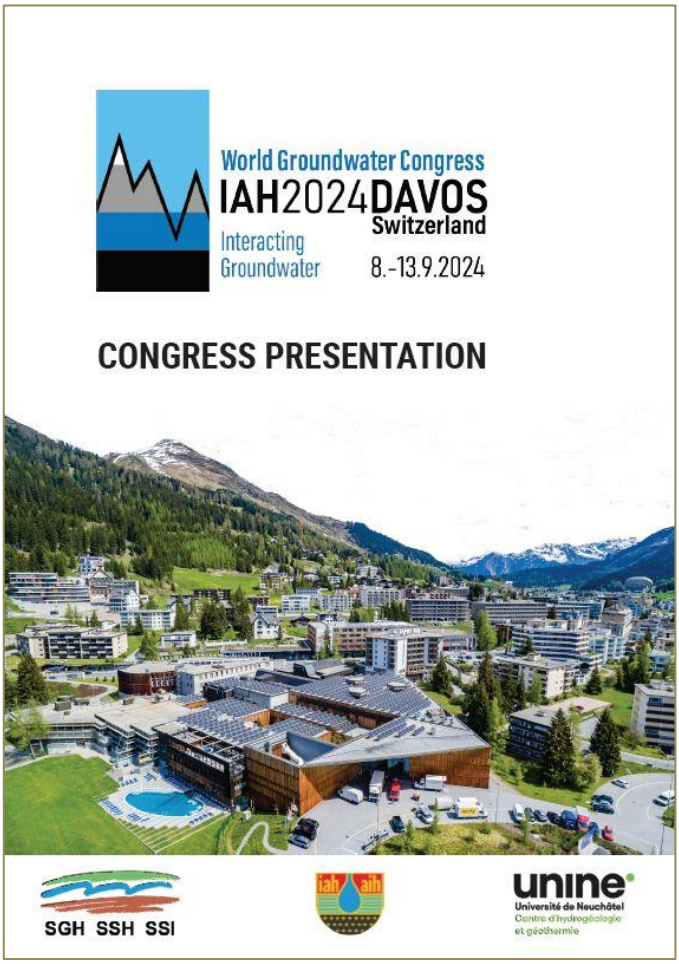
We hope organizers will grant it soon (they have just informed they are working on):

We thank you very much for proposing a session. The scientific committee is now evaluation all the session proposals and we will inform you on acceptance in the next days. We might also contact you in case we have any questions.

With best regards,

The Swiss IAH Congress Team
www.iah2024davos.org

They ask over 25 abstracts to hold a MAR session. So, *MARers*, please, proceed accordingly.



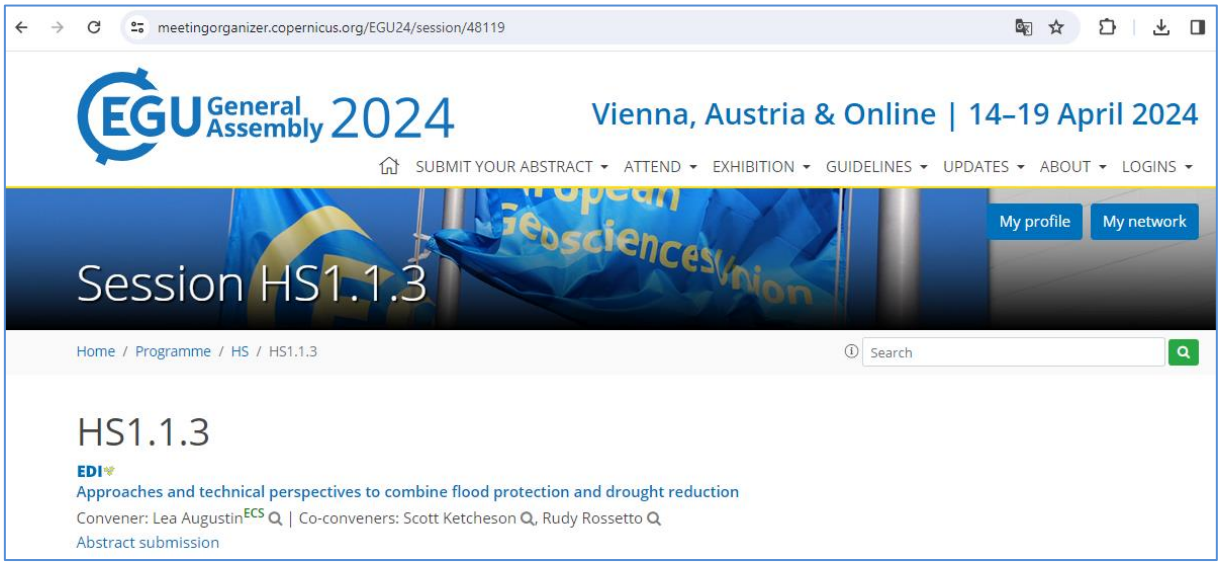
More info: https://www.iah2024davos.org/

SEMINARS AND WEBINARS

[MARSoluT] EGU24 session HS1.1.3 Approaches and technical perspectives to combine flood protection and drought reduction

Dear colleagues,
Please consider submitting an abstract to the EGU General Assembly 2024 session:

HS1.1.3 Approaches and technical perspectives to combine flood protection and drought reduction



https://meetingorganizer.copernicus.org/EGU24/session/48119

Global climate change causes an increasing frequency and intensity of floods and droughts. Nevertheless, management strategies and technical compensation and mitigation measures are often thought only from one side of the extreme, like flood retention basins releasing the stored flood water within days instead of keeping it in the region. On the other hand, managed aquifer recharge, especially when applied in drinking water catchments, is often turned off during flooding events, due to suspected contamination risks to the aquifer. Additionally, natural wetlands and/or the restoration of degraded wetlands can influence catchment water availability and flood and drought severity. Successful management of regional water resources seems to require approaches, tools, and management strategies that combine techniques from flood protection and drought prevention, i.e., combining water retention, treatment, and infiltration in subsurface storage systems (ideally aquifers) for long-term high-quality uses.

For this session we welcome contributions focusing on the whole strategic and operative management processes of these extreme events including:
• Field studies and modelling experiments for the hydrological hazards, sensitivity, and their consequences
• Interdisciplinary approaches for managing scarce water resources and flooding events and to support decision-making (e.g., public water supply, agriculture, industry, or environmental water use)
• Examples from coupling flood dams with managed aquifer recharge (Flood-MAR) including its legal framework

• *Development of fast and robust infiltration and treatment schemes for flood waves*
• *Development of fast in-situ analytical tools to measure the water quality of the infiltrated water*
• *Mitigation measures, ranging from technical solutions like storm water storage to an adaptive design of urban and rural areas or operative-working forecasting systems*
• *Studies that evaluate the role of wetlands in the context of water availability and extreme hydrological events*

Deadline for abstract submissions: 10 January 2024 (13:00 CET)

Convener: Lea Augustin
Co-conveners: Scott Ketcheson, Rudy Rossetto

Booking necessary at: https://bit.ly/RegistroWebinar1_IAH_CM

Thank you Rudy Rossetto for the invitation.

NEW MAR OR MAR-RELATED ACTIVITIES

MAR news MARSOLut project. Two new thesis on MAR have been defended successfully

The 3rd and 4th MARSOLut Early Stage researchers have defended their thesis.

Francesco Demichele. EWA Malta.

https://www.linkedin.com/feed/update/urn:li:activity:7133072511700733954?utm_source=share&utm_medium=member_desktop

Esteban Caligaris. December the 1st 2023. Santa Anna Pisa

Esteban Rafael Caligaris successfully defended his PhD thesis at Scuola Superiore Sant'Anna within the @MARSolut project discussing Hydroinformatics and Monitoring for investigating groundwater quality changes in Managed Aquifer Recharge. We warmly congratulate with Esteban and hope all the best for his future career. Excellent done Esteban!
Rudy Rossetto.

IAH-MAR Commission has asked MARSOLut coordinator to gather and make public all the thesis from the MARSOLut researchers. At this moment there are 4/12 already finished, and only one on the Internet.

More info:
www.marsolut-itn.eu

CONGRATULATIONS FRANCESCO AND ESTEBAN ON BEHALF OF THE MAR COMMUNITY!

MAR JOB OPPORTUNITIES

Position for MAR work at Berkeley University (USA)

A position on MAR for a young researcher in Center for Law, Energy & the Environment, University of California, Berkeley.

Postdoc on our major project developing comprehensive US national-level guidance for MAR implementation.

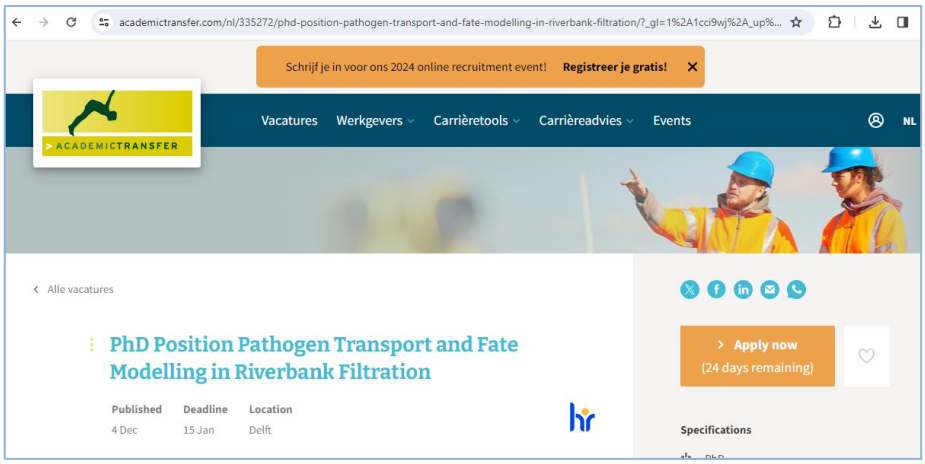
The position will be closed by the time of this newsletter, so, please, attend the following link:

https://aprecruit.berkeley.edu/JPF03923

The project is focused on developing pathways for broader implementation of policies, activities, and projects leading to enhanced groundwater recharge. This position will revolve around interdisciplinary research and problem solving, including devising and creating primary research on geochemical and physical elements of MAR, and situating it within its institutional and economic context.

Thank you Michael Kiparsky for informing.

Position for MAR work at TU Delft University (The Netherlands)



PhD Position Pathogen Transport and Fate Modelling in Riverbank Filtration — AcademicTransfer

Application deadline 15 Jan 2024.

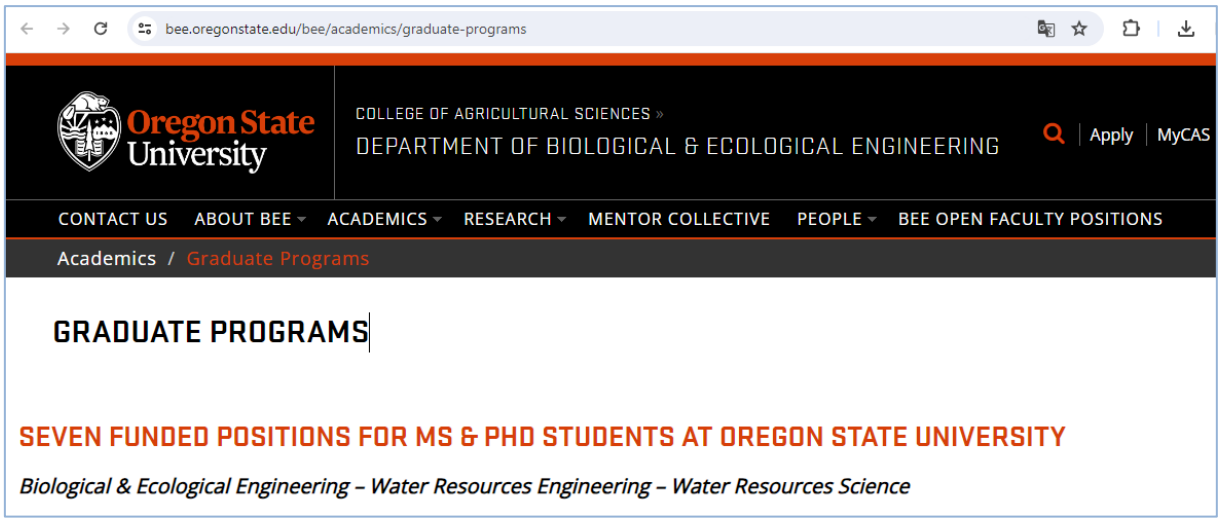
Thank you Boris van Breukelen for informing.

Positions for MAR work at Oregon State University (USA)

Two funded PhD positions for various MAR project in Oregon, USA.

Skills in geochemistry, geophysics, subsurface characterization, water quality, modeling around drywell-AgMAR etc would be great. Please share with any students with a Master's and interested in PhD in Water Resources Engineering.

The application can be submitted until end of this calendar year via OSU Portal: https://bee.oregonstate.edu/bee/academics/graduate-programs



Email salini.sasidharan@oregostate.edu

Thank you Salini Sasidharan for informing

MORE ACTION

Some MAR-related news from SUNASS Peru (in Spanish)

De las 50 empresas de agua del país, 10 solo usan fuentes subterráneas para abastecer a población de su ámbito. El agua subterránea es un recurso estratégico, resalta Sunass en foro.

https://panamericana.pe/nacionales/398344-sunass-26-agua-usada-empresas-prestadoras-pais-proviene-fuentes-subterraneas

Doñana National Park (Spain) nearing collapse and considering MAR opportunities (in Spanish)

Doñana wetlands label has been retired by the UICN due to the “management of the park”. Read more:

https://cadenaser.com/nacional/2023/12/13/la-situacion-del-acuifero-es-de-colapso-empeora-la-sequia-en-donana-con-la-mayoria-de-sus-zonas-en-alarma-cadena-ser/

Whatsapp group on Aquifer Recharge Management

This is the link to join the group, with 166 participants today:

https://chat.whatsapp.com/J8jKMuCXrTr83d1Sl9vDBe

Previous IAH-MAR Newsletters

Please, remember that you can access the previous newsletters in our website:

https://recharge.iah.org/newsletters

IAH-MAR Commission on Twitter

@IAHMARCom

https://twitter.com/IAHMARCom

IAH-MAR Commission´s sister Web sites

http://china-mar.ujn.edu.cn/

https://dinamar.tragsa.es/

@4dina_mar

https://www.linkedin.com/groups/4690290/ (512 members)

IAH MAR Commission Forum

Please, remember you can book freely in the IAH MAR Commission Forum:
https://lists.flinders.edu.au/mailman/listinfo/iah-mar.listcgs

That´s all by now… **please, keep reporting** (dinamar@tragsa.es)**. We miss pieces of news, specially from Asia**

Dr. Enrique Fernández Escalante, on behalf of the IAH MAR Commission co-chairs.

2023 December 22th