

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

Please, have a look on these MAR pieces of news for 2023 August and September

IAH MAR Commission Newsletter. 2023 August-September

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PUBLICATIONS ABOUT MAR

Managed Aquifer Recharge. A key to sustainability special issue has finished!

Selected papers on MAR, specially presented at ISMAR 11, are published in this Special Issue of the open-access Journal WATER.

Ten papers are gathered in this special issue, the last one still in press.

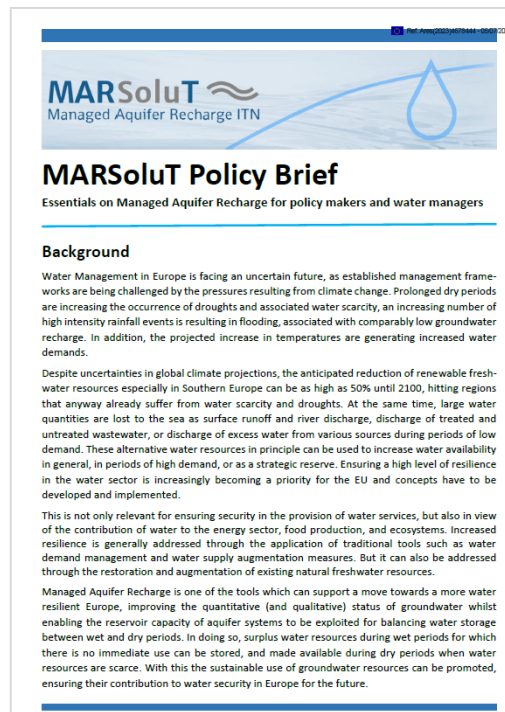
This special issue closes from now. Get ready for the future ISMAR 12's special issue.

Thank you very much to the authors for their contributions, it is an outstanding collection.

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

MARSoluT Policy Brief. Essentials on Managed Aquifer Recharge for policy makers and water managers

The MARSOLUT H2020 project (marsolut-itn.eu) has released the final “policy brief” document. It is a summary of the whole advances directed at decision makers and to the MAR community in general.



Access and download: <https://dinamar.tragsa.es/post/marsolut-policy-brief-essentials-on-managed-aquifer-recharge-for-policy-makers-and-water-managers-in-english>

MAR in California. Release of three MAR handbooks

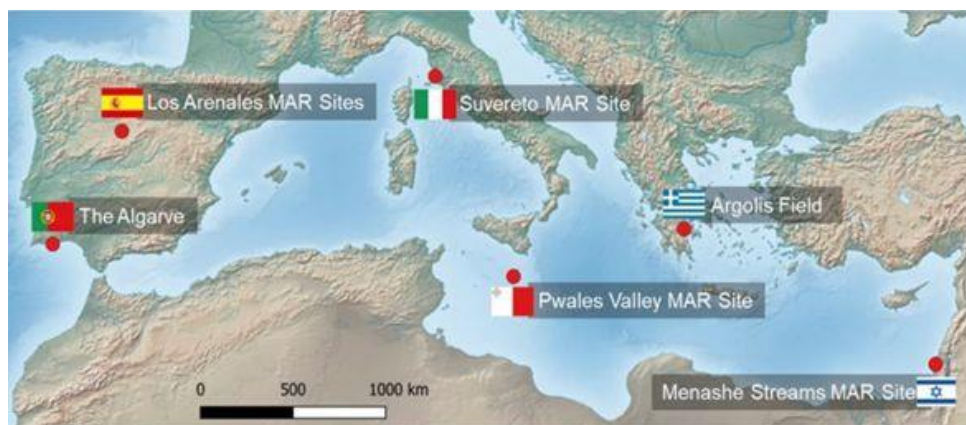
Recent post gathering five interesting links to MAR in California, three of them are recent publications. As a novelty, to mention that aquifers are considered "natural infrastructures".

<https://www.aguasresiduales.info/revista/noticias/manuales-y-articulos-para-la-recarga-planificada-d-6quX2>



The final version of the MARSOLUT project deliverables coordinated by Tragsa are already online (Deliverables 4.3 and 4.4).

During the first half of 2023, the two deliverables that Tragsa has coordinated within the framework of the MARSOLut project (www.marsolut-itn.eu) have been completed, in accordance with its Grant Agreement. Both correspond to work package 4: "Optimizing Design".



Access and download:

Deliverable 4.3. Report on improving water quality at active MAR sites in Spain.

<https://lnkd.in/d3NWxQKJ>

Deliverable 4.4. Report on the performance of optimal MAR designs.

<https://lnkd.in/dd6JWjET>

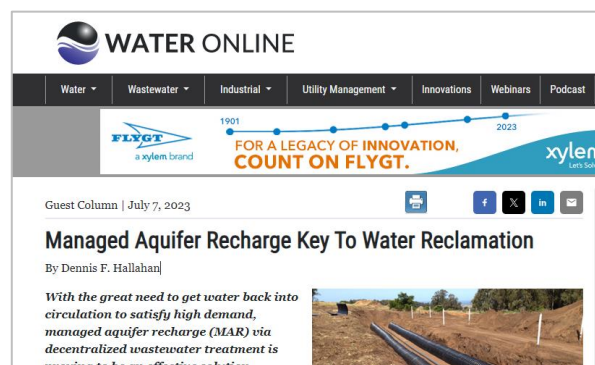
More info: <https://lnkd.in/dSa6gEhP>

The rest of the deliverables will be posted shortly in the project's website.

WATER Online. Managed Aquifer Recharge Key To Water Reclamation

Water online website has published a post written by Dennis F. Hallahan:

With the great need to get water back into circulation to satisfy high demand, managed aquifer recharge (MAR) via decentralized wastewater treatment is proving to be an effective solution...



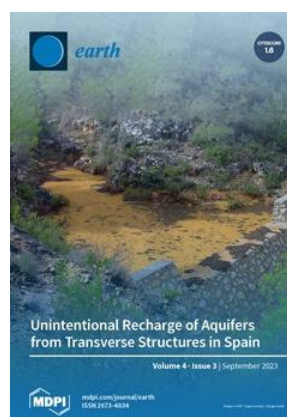
Read more: <https://www.wateronline.com/doc/managed-aquifer-recharge-key-to-water-reclamation-0001>

NEW MAR-RELATED PUBLICATIONS

Earth journal special issue including MAR papers

Earth journal has just released their special issue with some MAR-related articles. One of them has been selected for the cover.

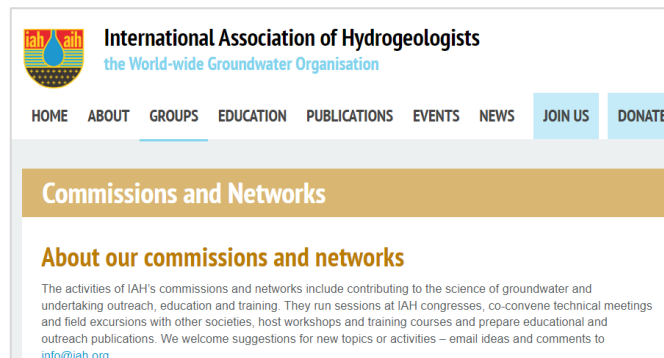
Download: <https://www.mdpi.com/2673-4834/4/3>



Amazingly, unintentional MAR is about 4 times greater than intentional MAR in Spain, thanks to the dykes and small dams.

IAH August Newsletter

IAH's August newsletter is now online, highlighting the Cape Town congress and latest news and updates from the IAH and their Commissions, Networks and National Chapters. Scant news from IAH-MAR have been included in this case.



Please, consider possible news articles for future editions.

To contact IAH Executive:

info@iah.org

www.iah.org

MAR AND MAR-RELATED CONFERENCES AND SEMINARS

MAR in the next IWRA's World Water Congress

This September 11st, during the IWRA world water conference, has taken place a specific session on MAR: *Managed Aquifer Recharge: A Proven Technology to Improve Water Security*. From 15 to 16:30, local time.

Results have not still been posted in the website.



More info: <https://www.worldwatercongress.com>

50th IAH congress. Cape Town, South Africa. September 18th to 22nd specific MAR session

Under the title "Groundwater: A Matter of Scale" the next IAH Congress will take place in Cape Town, South Africa, in September, 18-22.



Daniela Benedicto and Kevin Pietersen have chaired the MAR session, with very positive results. Pg. 33 and 34 in the program: <https://iah2023.org.za/scientific-programme/>

The results will be published in the next IAH-MAR newsletter. In total 16 abstracts on MAR were received. Access to the abstracts collection:
https://recharge.iah.org/files/2023/10/50IAH-MAR-Abstracts_CapeTown2023.pdf

More info: <https://iah2023.org.za/>

Western Groundwater Congress

Groundwater Resources Association (GRA) is proud to present the 2023 Western Groundwater Congress: the Future of Groundwater is YOU. In 2022, GRA took a look back over its 30-year history for our 30th Anniversary. We explored how GRA has been built for Change and how it has become a fundamental organization to the groundwater industry over its 30-year history...



More info: <https://www.grac.org/events/514/>

International RBF Conference, Dresden, 16-18 October 2023. Abstract deadline July 31th.

Bank filtration / riverbank filtration (BF/RBF) is an element of managed aquifer recharge and has been used by riverside communities for many decades as a natural water treatment process. RBF forms part of a multi-barrier approach to drinking water supply at numerous sites. With a growing and conscious use worldwide...

RBF CONFERENCE
Dresden, Germany
16 to 18 October 2023

Organizers
The conference is organized by the Division of Water Sciences of the University of Applied Sciences Dresden. It is co-funded by the Federal Ministry of Education and Research of Germany as an activity of the project CCRBE: Expansion of the Indo-German Competence Centre to Riverbank Filtration in the CONNECT program (BMBWF grant no. 01GJ20003).



CONNECT
Education Research Innovation

Federal Ministry of Education and Research

Wissenschaft für Technik und Wirtschaft Dresden
HTW

**INTERNATIONAL RIVERBANK
FILTRATION CONFERENCE
DRESDEN, GERMANY**

16 to 18 October 2023
at
MARITIM HOTEL DRESDEN -
INTERNATIONAL CONGRESS CENTER



Venue
Maritim Hotel Dresden - International Congress Center
Dresdnerstraße 10 - 12/Ostra-Ufer
01067 Dresden
<https://www.maritim.com>

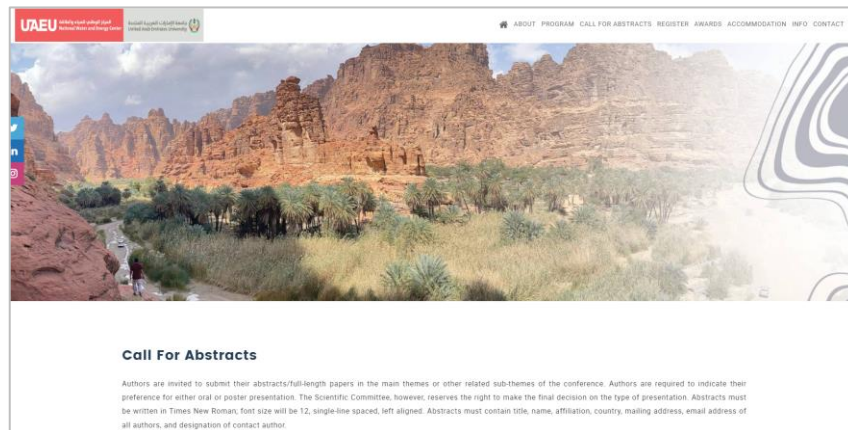
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Friedrich-Liszt-Platz 1
01069 Dresden
<http://www.htw-dresden.de>

More info: www.htw-dresden.de/rbfconf and https://www.htw-dresden.de/fileadmin/HTW/Fakultaeten/Bauingenieurwesen/RBF_Conference_2023_Flyer.pdf.

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>

SEMINARS AND WEBINARS

Geofluid Piacenza (Italy). Special MAR sessions. 2023 September 14th and 15th

Workshop on MAR scheme design and operation according to DM 100/2016 (regulation for licensing MAR schemes in Italy)

On September 14th 2023 at GEOFLUID (Piacenza, Italy) 60 participants took part in a workshop on MAR design and operation according to the Italian regulation DM 100/2016.

The workshop aimed at offering participants a crash course of approximately three hours on managed aquifer recharge following the Italian regulation to licence MAR schemes (DM 100/2016). Groundwater recharge techniques constitute potential solutions to water supply problems, combining low-energy consumption and negligible environmental impacts, configuring as exemplary WEF E NEXUS solutions. The presentations addressed the issues of location and feasibility of MAR systems, the various types of systems that can be created, the authorization process, the design of the systems and their management (maintenance and resolution of the most common management problems).

A series of case studies allowed the participants to obtain information on the effectiveness and impact of the actions implemented. Speakers were from the research world (Stefania Da Pelo, University of Cagliari, and Rudy Rossetto, Scuola Superiore Sant'Anna), consultancy (Andrea Sottani, Sinergeo), and public authorities (Paolo Severi, Regione Emilia Romagna). Enrique F. Escalante (TRAGSA, Spain) provided an overview at global scale of MAR application.

The workshop was organised by Scuola Superiore Sant'Anna (Pisa) within the framework of the H2020 PRIMA NEXUS-NESS project (<https://prima-nexus-ness.org/>), and MARSOLut, under the patronage of IAH Italy.



Download the presentations: [presentations 1.zip](#)

Thank you Rudy Rossetto for reporting.

AGU Fall 2023 meeting. Dec. 11 – 15, 2023. San Francisco

We would like to invite you to submit an abstract to the AGU Fall 2023 meeting session H040. Climate proofing our water supply through upscaling managed aquifer recharge. The AGU Fall 2023 meeting will take place between Dec. 11 – 15, 2023 in San Francisco in person and on line anywhere. Abstract is due by Aug. 1, 2023, and the link to submit is: <https://agu.confex.com/agu/fm23/prelim.cgi/Session/185164>

Session H040 is focussed on Managed Aquifer Recharge (MAR).



WAT-CHANGE. A one-week crash-course on nature-based solutions

Scuola Superiore Sant'Anna – Pisa (Italy) organizes a course in which MAR is a key topic.

The course is based on 20 hours of interactive and cross-disciplinary learning from academia and professional world along with 8 hours of laboratory exercises or with the aid of PCs and free and open source software.

A field trip will take place to visit the ecohydrological infrastructures of the Val di Cornia area. This area has recently been recognized by UNESCO's International Hydrology Program as a site of global importance for ecohydrology.

A final 4-hour workshop will bring participants in contact with Italian companies involved in the design and management of nature-based solutions and with regulatory bodies, in order to deepen the knowledge of the regulatory framework.



SEASONAL SCHOOL
WAT-CHANGE - Water-related ecosystem services for adapting societies to climate change
A one-week crash-course on nature-based solutions at Scuola Superiore Sant'Anna – Pisa (Italy)

While **climate change** is posing at risk traditional **water resources management**, there is the urgent need to devise **low-energy** and **low-impact solutions** to adapt the environment, societies and economies to this threat.

The **WAT-CHANGE Seasonal School** aims at introducing the participants to the new growing area of **nature-based solutions** providing **water-related ecosystem services**.

More info: <https://www.santannapisa.it/en/seasonalschool/wat-change-water-ecosystem-climate-change>

WEBINARS

PAST WEBINARS ON MAR. Former announces:

Integrating Surface Water Management and Managed Aquifer Recharge: Case Study from a USACE-OCWD Partnership



ABOUT GWPC EVENTS RESOURCES NEWS TOPICS DATA MEMBERS

WEBINAR – INTEGRATING SURFACE WATER MANAGEMENT AND MANAGED AQUIFER RECHARGE: CASE STUDY FROM A USACE-OCWD PARTNERSHIP

Home / Events / Webinar – Integrating Surface Water Management and Managed Aquifer Recharge: Case Study from a USACE-OCWD Partnership

Recorded webinar access (requires inscription):

<https://www.gwpc.org/event/webinar-integrating-surface-water-management-and-managed-aquifer-recharge-case-study-from-a-usace-ocwd-partnership/>

<https://register.gotowebinar.com/recording/3503063170952320769>

Thank you Andrew M. O'Reilly for reporting

NEW MAR OR MAR-RELATED ACTIVITIES

Call for action: Benchmark MAR in Europe. MARWAL project is about to close their survey

The Group of Hydrogeology & Environmental Geology at the University of Liège coordinates the MARWAL* project consisting of a feasibility study of managed aquifer recharge projects for the aquifers of the Walloon Region of Belgium. In this context, an online international survey has been launched to perform a benchmarking analysis of existing pilot and full-scale MAR projects in Europe and around the world.

This survey is accessible through the following web link:

English version : https://my.uliege.be/portail/go_xt.do?a=o%7C11004%7Ce%7C546928

French version : https://my.uliege.be/portail/go_xt.do?a=o%7C11004%7Ce%7C546928

If you are involved in MAR projects, we would be very pleased that you take a few minutes of your time to fill the online survey. This should not take you more than 5 to 10 minutes. Organizers still need more contributions.



*MARWAL: Managed Aquifer Recharge for the aquifers of Wallonia

More info: https://www.uee.uliege.be/cms/c_10264166/fr/projet-marwal

Or email: serge.brouyere@uliege.be

We still encourage your participation.

AGREEMAR project

AgreeMAR project's advances in the Spanish Media (iAgua).

<https://www.iagua.es/noticias/iiama/proyecto-agreemar-avanza-mejora-gestion-agua-regiones-mediterraneo>

The website of the project is already on line:



More info: <https://agreemar.webspace.tu-dresden.de/>

GIS-based MCDA analysis in India. Findings

Identifying the suitable managed aquifer recharge (MAR) strategy in an overexploited and contaminated river basin. The findings from this study provides suitable sites for Agriculture based Managed aquifer recharge through an improved understanding of parametrization during GIS-based MCDA analysis. The AgMAR implementation strategy was further evaluated by supplementing excess water with the least-used canal network distribution across the basin.

Key highlights of our research include:

- This study used the AHP-based MCDA method to find potential sites for MAR application using various hydrogeological parameters.
- Out of the total area of Hindon River basin, 11%, 61%, and 28% of areas have been classified as highly suitable, moderately suitable, and unsuitable for potential AgMAR sites.
- Sugarcane crops that can withstand waterlogged conditions and the least used canal network availability further confirm the suitability of AgMAR implementation in HRB.
- Therefore, assuming excess water availability in the existing canal network, the AquaCrop model for sugarcane with additional irrigation during the grand growth stage indicates that recharge potential can be increased up to 545 mm/year when maximum excess water is available for AgMAR.

For more info, email: jadavk_dhanjibhai@wr.iitr.ac.in

Thank you Dr. Kartik Jadav for reporting.

MORE ACTION

OCWD was featured on local news about a successful stormwater capture from Tropical Storm Hilary



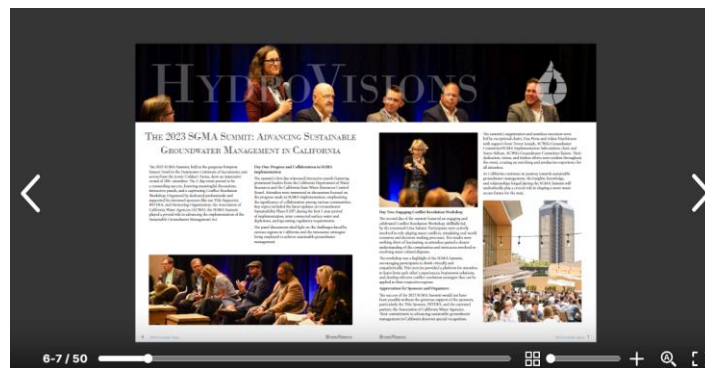
CBS 2 news:

<https://www.linkedin.com/feed/update/urn:li:activity:7102460666313142272/>

Thank you, Adam Hutchinson, for reporting

HydroVisions | Summer 2023 (GRA)

New HydroVisions document just released. Please, have a look.

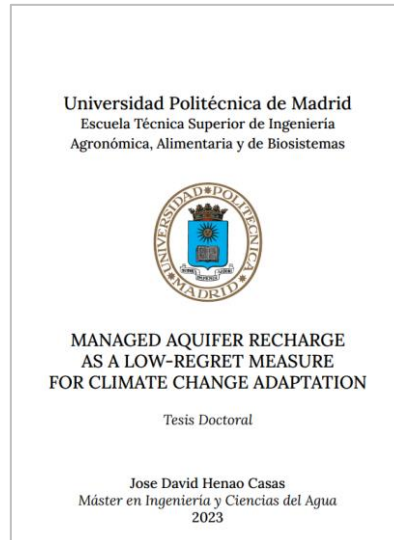


Link: https://issuu.com/hydrovisions/docs/2023_hydrovisions_-_summer/6

The thesis on MAR from J.D. Henao, defended last April 26th, is already available on the Internet

Announced in a previous newsletter (2023 May), it is available now...

Managed aquifer recharge as a low-regret measure for climate change adaptation
Henao Casas, Jose David (2023). E.T.S. de Ingeniería Agronómica, Alimentaria y de Biosistemas (UPM). <https://doi.org/10.20868/UPM.thesis.73999>.



DOI: 10.20868/UPM.thesis.73999

Download: <https://oa.upm.es/73999/>

Thank you, J.David. Henao, for reporting.

New MAR-related regulation for Spain (in Spanish)

La recarga artificial o gestionada en el nuevo RDPH.

El primero de septiembre se ha publicado el texto modificado del Reglamento del Dominio Público Hidráulico (RDPH), que desarrolla la ley de Aguas española: “REAL DECRETO 665/2023, de 18 de julio, por el que se modifica el Reglamento del Dominio Público Hidráulico”

Algunas novedades:

-Las aguas para recarga artificial ya no serán nunca más un vertido en España (Art. 273 pto 1).

-La recarga artificial pasa a llamarse “recarga artificial o gestionada”. (art. 1bis, ak).

-El artículo 273, punto tres, ha incluido algo clave que resulta novedoso en la legislación internacional (me consta que ha suscitado debate en el ministerio) sic:

“Cualquier volumen de agua excedentario de calidad apropiada será susceptible de ser empleado para la recarga artificial de acuíferos...”

Las autorizaciones y permisos son exigentes, pero razonables.

La recarga artificial "o gestionada" quizás no sea la panacea para la gestión hídrica en el contexto actual, de eventos extremos relacionados con el agua y de cambio climático, pero tampoco conocemos una tecnología mejor para solventar problemas actuales de escasez de agua y sequía, siempre dentro del marco de la gestión integrada.

Summary in English:

Artificial recharge or managed aquifer recharge in the new Spanish water act (RDPH) In September 1st has been published the modified text of the Regulation of the Public Hydraulic Domain (RDPH), which develops the Spanish Water Law: "REAL DECRETO 665/2023, de 18 de julio, por el que se modifica el Reglamento del Dominio Público Hidráulico". Some advances on MAR:

First, water for artificial recharge will not be a spill any longer in Spain (Art. 273 pto 1).

In the definitions, artificial recharge is renamed "artificial recharge or managed aquifer recharge". (Art. 1bis, ak).

Article 273, point three, has included something key that I proposed and is new in international law regarding MAR technique (I know it has had sparked debate in the ministry):

"Any surplus volume of water of appropriate quality shall be capable of being used for the artificial recharge of aquifers...."

Permission process becomes hard but rational.

El Carracillo MAR system. Castile and Leon, Spain. 3rd stage (in Spanish)

Last month ITACYL-JCyL have entrusted Tragsa to start implementing a third stage broadening El Carracillo MAR system, one of the biggest in Europe.

Not everyone is satisfied with this fact, and associations against have created a blog stating arguments against MAR for this specific site. As it is also interesting for our community to know reasons against, we share the link. We'll try to learn from the other side...



Blog against El Carracillo MAR 3rd stage:

<https://cegaelrioquenosune.blogspot.com/2020/11/el-proyecto-de-recarga-del-carracillo.html>

Whatsapp group on Aquifer Recharge Management

This is the link to join the group, with 168 participants today:

<https://chat.whatsapp.com/HDIU5W6HK SXFg9mYF2zZi7>

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.traqsa.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@traqsa.es). We miss pieces of news, specially from Asia

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

2023 September 30th