



IAH 2026

World Groundwater Congress

53rd Congress of the International Association of Hydrogeologists



PRESS BACKGROUND MATERIAL

Drought and water scarcity among the key issues at the world's hydrogeologists' congress in Budapest

This summer's drought has once again drawn attention to the fact that **Hungary's long-term water security** cannot be ensured without a deeper understanding of **groundwater processes and conditions** and the conscious use of these water resources. Groundwater forms the basis of Hungary's **drinking-water supply** and plays a decisive role in agriculture, **ecosystem functioning** and energy production, making **hydrogeological expertise increasingly strategic** for the country's future. Successful adaptation to drought and **water scarcity** depends to a large extent on how well we understand and **sustainably use our groundwater resources**.

This makes the **53rd World Groundwater Congress** of the International Association of Hydrogeologists (IAH), to be held in Budapest on **14–18 September 2026**, particularly timely. The congress returns to Hungary after half a century. It will welcome **nearly 900 participants** from **more than 70 countries**; the great majority will come from abroad, and **leading experts from around the world** will be present.

The congress is organised by the **Hungarian National Chapter of IAH**. The Congress Chair is **Anita Erőss** and the Chair of the Scientific Committee is **Judit Mádl-Szőnyi**; both are hydrogeologists at Eötvös Loránd University. The event also has a special Hungarian connection: the current President of IAH is **Teodóra Szócs** of the **Ludovika University of Public Service**. The World Congress is being held with broad support and through cooperation among Hungarian and international universities, research institutes, professional organisations and industry partners.

The main theme of the congress is “**Groundwater – A Key Multi-Resource**”, presenting groundwater as a vital and versatile resource. The congress's central message is particularly relevant to Hungary. More frequent drought periods, **water scarcity** in the **Danube–Tisza Interfluve** and the **Great Hungarian Plain**, **water retention**, and adaptation to **climate change** are challenges for which hydrogeology provides essential knowledge. The Budapest congress is therefore not only a scientific event, but also an opportunity for **international experience to contribute to shaping Hungary's water future**.

From science to global water decision-making

The Budapest meeting is both a **scientific world congress** and a **major international water forum**. More than one hundred participants will come from **governmental, regulatory, public, professional and international organisations**, including experts linked to the United Nations. The congress therefore connects researchers with actors from water management practice, decision-making and water diplomacy.

One of its highlights is the plenary session “**Groundwater at the Heart of the 2026 UN Water Conference: IAH Positions and UN Perspectives**” on 16 September. The session is linked to preparations for the **2026 UN Water Conference** to be held in Abu Dhabi in December and aims to help ensure that groundwater receives appropriate weight in **global water decision-making**, given its fundamental role in achieving sustainability goals.

Closely linked to this is the plenary session “**Towards a Transdisciplinary Global Groundwater Sustainability Network**”, which aims to establish a new global virtual network for groundwater sustainability. The initiative seeks to connect **research, monitoring, water management and decision-making** through international cooperation, using satellite observations, in-situ measurements and artificial-intelligence-based analyses. It also aims to support region-specific decision-making mechanisms co-developed with water users while remaining firmly grounded in scientific evidence.

The congress will contribute to finalising the **IAH Position Paper** being prepared for the UN conference and to developing an international message formulated in Budapest, the “**Budapest Declaration**”.

The professional week begins on **14 September** with **field trips** presenting **Hungary's current water challenges** to international participants. It is no coincidence that many of the trips visit places where participants can directly observe the consequences of domestic **water scarcity** and the related water-management challenges. The examples demonstrate clearly that **understanding and deliberately managing groundwater conditions is becoming an increasingly practical and strategic issue for Hungary**. Destinations include **Lake Velence**, where surface water–groundwater interactions are examined; the drought-affected **Danube–Tisza Interfluve**, where **water retention** and managed aquifer recharge are in focus; and the **Balaton Highlands** and the **Tihany Peninsula**, where the vulnerability of groundwater-dependent ecosystems is presented. Participants will also visit one of Budapest's bank-filtered drinking-water bases, Tata's distinctive karst water system and springs, Szeged's geothermal district-heating system, the dewatering system of the Bükkábrány open-pit mine, and sites of the Buda Thermal Karst associated with caves and thermal-water use.

The **four-day scientific programme** that follows addresses the most important global and regional groundwater issues. Key topics include **climate change** and **water scarcity**, the impacts of droughts and other **hydrological**



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extremes, integrated management of surface water and groundwater resources, and **water retention**. Dedicated sessions cover **regional groundwater flow systems**, karst and deep groundwater systems, water quality and emerging contaminants, transboundary water resources, and the role of groundwater in the **green energy transition and geothermal energy use**. Particular attention is given to **new research and decision-support tools**, including large-scale numerical modelling and applications of **artificial intelligence** in hydrogeology. **The seven keynote speakers reflect this breadth: Miklós Antics**, Managing Director and Associate Partner at GPC Instrumentation Process and GEOFLUID France, Roissy-en-France, France; **Marc Bierkens**, Professor of Earth Surface Hydrology at Utrecht University, Utrecht, the Netherlands; **Tom Gleeson**, Professor of Civil Engineering at the University of Victoria, **Victoria, Canada**; **Xiao-Wei Jiang**, Professor of Hydrogeology at China University of Geosciences, Beijing, China; **John Molson**, Professor in the Department of Geology and Geological Engineering at Université Laval, Québec City, Canada; **Bridget R. Scanlon**, Research Professor at the Bureau of Economic Geology, Jackson School of Geosciences, The University of Texas, Austin, Texas, USA; and **Chunmiao Zheng**, Chair Professor and Vice President at the Eastern Institute of Technology, Ningbo, China. Their keynote lectures range from geothermal well design and groundwater sustainability to socio-hydrogeology, groundwater flow-system theory and modelling, climate extremes and AI-enabled groundwater modelling.

The inaugural IAH Distinguished Lecture will be delivered by Jay Famiglietti, Global Futures Professor in the School of Sustainability at Arizona State University, Tempe, Arizona, USA. His lecture, **“The Emergence of Groundwater as the Most Valuable Natural Resource of the 21st Century”**, will address global groundwater depletion and the growing strategic importance of groundwater.

The official opening of the congress will take place at 8:00 a.m. on **15 September** in Pátria Hall at the **Budapest Congress Center**. Welcome addresses will be delivered by **Anita Orbán**, Deputy Prime Minister and Minister of Foreign Affairs of Hungary; **Mihály Pósfai**, President of the Hungarian Academy of Sciences; **Lénárd Darázs**, Rector of Eötvös Loránd University; **Balázs Horváth**, Deputy State Secretary for Water Management; and **Teodóra Szócs**, President of the International Association of Hydrogeologists. **Abou Amani**, Director of UNESCO's Division of Water Sciences and Secretary of the Intergovernmental Hydrological Programme (IHP), will address participants by video message. The event will be hosted by **Anita Erőss**, Congress Chair.

The opening ceremony and the congress will pay special tribute to the scientific legacy of **Professor József Tóth (1933–2026)**, the world-renowned Hungarian hydrogeologist. At the opening, **Judit Mádl-Szőnyi** will commemorate the scientist who passed away this summer. He was **one of the most internationally influential hydrogeologists of the twentieth century** and was deeply committed to strengthening the international networks of Hungarian hydrogeology and building a strong national school. His theory of **regional groundwater flow systems** fundamentally changed modern hydrogeological thinking and continues to shape research and education worldwide. His scientific and personal legacy will also be honoured in a dedicated memorial session.

The message of the IAH 2026 World Groundwater Congress goes far beyond **water scarcity** and drought. At the same time, this summer's drought has made particularly clear that **water scarcity cannot be addressed without a thorough understanding of groundwater resources**. For Hungary, groundwater is not merely a natural resource but a **strategic national asset**, and understanding and managing it sustainably is central to **climate-change adaptation**. Groundwater is an often underestimated yet fundamental part of the water cycle. It is simultaneously a **primary drinking-water resource**, a key factor in **ecosystem functioning**, an indispensable resource for **agriculture and energy production**, and one of the pillars of adaptation to **climate change**. The Budapest congress aims to bring these connections greater attention in science, water management practice, policy and international cooperation, and to draw wider public attention to the importance of **hidden groundwater resources**.

András Zoltai's **Blue Memoir** photo series and **Tom Gleeson's** interactive exhibition make the hidden world of groundwater and its connections with people, landscapes and communities visible through the language of art. The initiative strengthens **dialogue between science and art** and demonstrates how art can support science communication by enabling a more personal and experiential understanding of the importance of groundwater resources and shared responsibility.

One of the most important messages of the IAH 2026 World Groundwater Congress is that **protecting, understanding and sustainably using groundwater is not solely the responsibility of water professionals**. Groundwater is fundamental to future **water, food and energy security**, healthy ecosystems and societies capable of adapting to **climate change**. This summer's drought has clearly shown that understanding and sustainably using groundwater is one of the key issues for Hungary's future. The Budapest World Congress therefore also showcases the knowledge on which a country increasingly confronted by **water scarcity** must build its **water, food and energy security**.