NEWSLETTER

Reporting ISI news to you quarterly

No. 71 July 1, 2024

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UNESCO“国际泥沙计划”简报

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NEWS

Peng Liyuan visits UNESCO headquarters, meets agency chief

PARIS -- Peng Liyuan, wife of Chinese President Xi Jinping, visited the United Nations Educational, Scientific and Cultural Organization (UNESCO) headquartersin Paris on 6 May on invitation.

Upon the arrival of Peng, also a UNESCO special envoy for the advancement of girls' and women's education, UNESCO Director-General Audrey Azoulay warmly welcomed her at the entrance.

Azoulay accompanied Peng to visit an exhibition highlighting the ten-year achievements of cooperation between China and UNESCO, and spoke highly of China's contribution to the development of girls' and women's education around the world.

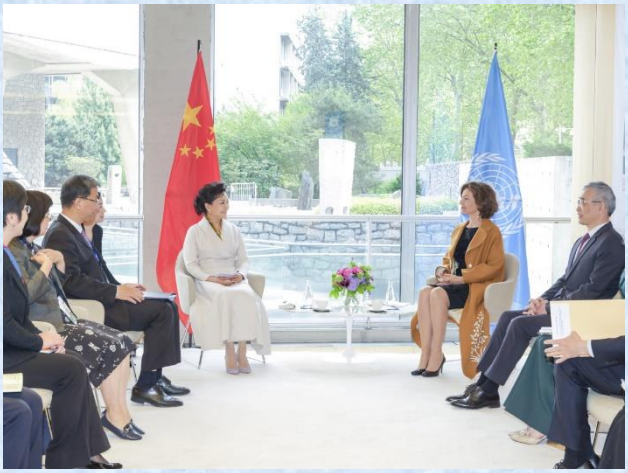
Peng briefed Azoulay on China's latest progress in promoting girls' and women's education, especially the achievements of the Spring Bud Project, a Chinese nationwide drive to help dropout girls return to school and to improve teaching conditions in impoverished areas.

Peng said that serving as the UNESCO special envoy for the advancement of girls' and women's education in the past decade, she has visited many schools in various countries and is delighted to see more and more women being able to have a better life thanks to education.

Promoting girls' and women's education is a great cause that is closely related to social progress and the shared future for humanity. The Chinese side is willing to work with UNESCO to encourage increased global investment in girls' and women's education, help more women obtain equal access to education rights and jointly create a better future, she added.

For her part, Azoulay highly praised Peng's work and contributions as the special envoy, expressing UNESCO's willingness to strengthen exchanges and cooperation with China to promote new developments in global girls' and women's education.

Azoulay presented Peng with a ten-year service honor certificate. Peng presented UNESCO with a tapestry titled "blooming spring bud" co-created by beneficiaries of the Spring Bud Project.



(Source: Xinhua)

26th session of the Intergovernmental Council of the Intergovernmental Hydrological Programme held at Paris, France, during June 3-7, 2024

The 26th session of the International Hydrological Programme (IHP) Intergovernmental Council of the UN Educational, Scientific and Cultural Organization (UNESCO) will convene from 3-7 June 2024. IHP's ninth phase (2022-2029) focuses on putting "science to action for a water secure world, in a changing environment".

Lidia Brito, Assistant Director-General of UNESCO, and Helmut Habersack, Chair of the UNESCO IHP Intergovernmental Council and President of the World Association for Sediment and Erosion Research (WASER), attended the meeting and gave the opening remarks. The meeting was chaired by Abou Amani, Director of UNESCO's Division of Hydrology and Secretary-General of IHP.

A scientific colloquium titled "50 years of Evolution of Science of Hydrology: From science to Application and Way Forward" was held on June 3. The colloquium was dedicated to the 50th anniversary of IHP and 60 years of the Water Programme at UNESCO since the International Hydrological decade (1965-1975). The celebration will take place in 2025.

The UNESCO Water Family meeting was held on 4 June. The meeting focused on three topics including: the contribution of water families to science, the contribution of water families to capacity development, and the contribution of water families to raising awareness. Prof. Jianli Zhang from IRTCES gave a presentation on the background of IRTCES and shared its contributions in five priority areas of IHP-IX.

The 26th Intergovernmental Council meeting was held on 5-6 June. The meeting reported and approved the resolutions and decisions adopted by the 25th session of IHP Council, the implementation of IHP Phase IX, the IHP Regional Perspective, the report on the main achievements of IHP Phase VIII, flagship initiatives and their coordination with the new Framework, etc.

The Council meeting commended the IHP Flagship initiative ISI for its efforts developing new strategies that to align to IHP-IX and the new Flagship initiatives Framework.

The Council is composed of 36 UNESCO Member States elected by the UNESCO General Conference at its ordinary sessions, held every two years. Each of UNESCO's six electoral regions elects Member States for Council membership to ensure equitable geographical distribution. Council members serve for four-year terms and are eligible for re-election.

The WASER president, Prof. Helmut Habersack, was officially appointed as the Chairperson of the 26th IHP Intergovernmental Council. Prof. Jianli Zhang, the Deputy Director of IRTCES and Prof. Hongling Shi, the Division Chief of IRTCES, also attended this meeting.

The International Sediment Initiative Advisory Board Meeting held at UNESCO Headquarters, Paris, during April 22-23, 2024

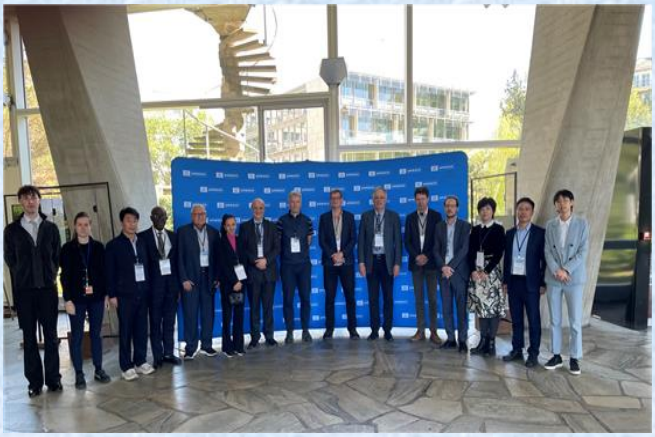
The International Sediment Initiative (ISI) Advisory Board Meeting on the ISI Strategy for IHP-IX (2022-2029) was held at UNESCO headquarters, Paris, France during April 22-23, 2024. The main objective of the meeting was to discuss and finalize the new ISI strategy and its workplan for the implementation of ISI during IHP-IX. Over 20 participants attended the meeting, both in person and on-line, including: Mr. Abou Amani, Director of the Division of Water Sciences and Secretary of the IHP, UNESCO; Dr. Anil Mishra and Dr. Koen Verbist, Chief and Programme Specialist of the Hydrological Systems, Climate Change and Adaptation Section, UNESCO; Prof. Manfred Spreafico, Prof. Des. E. Walling, and Prof. Cheng Liu, retiring members of the ISI Advisory Group; Prof. Hongling Shi, Secretary of the ISI Global Secretariat; and members of the new ISI Advisory Board to be approved.

During the opening session chaired by Dr. Anil Mishra, Mr. Abou Amani highly praised the achievements of ISI and the outstanding contributions of the retiring members of the ISI Advisory Group and Experts Group during IHP-VIII. He thanked the International Research and Training Center on Erosion and Sedimentation (IRTCES) for its contributions to scientific research, international technical exchange and training activities in its role as the ISI Technical Secretariat, as well as its support for other ISI activities. ISI is expected to make an important contribution to the strategy of IHP-IX. Dr. Koen Verbist gave a brief introduction to IHP-IX, highlighting that this phase puts science into action for a Water Secure World in a Changing Environment.

Dr. Koen Verbist chaired the following sessions, including: (1) A Review of the achievements of ISI work in IHP-VIII and an Introduction to Erosion and Sediment Transport and Management in river systems (ISI Thematic Priority 1); (2) Presentations from different Regional Groups (Group I Western European and North American States; Group III Latin American and Caribbean States; Group IV Asian and Pacific States; and Group Va Africa and Vb Arab States): Current Activities, Needs and Challenges of Sediments and Erosion; (3) An Introduction to Sediment-related Disaster Risk Reduction (Current Activities, Needs and Challenges); (4) An Introduction to Glacier-related sediment and erosion hazard management (Current Activities, Needs and Challenges); (5) Presentation of the draft new ISI Strategy (2022 to 2028), and brainstorming of overall objectives and the new ISI Strategy; (6) Brainstorming of the draft workplan for the ISI thematic priorities (1 - Erosion and Sediment Transport and Management in river systems; 2-Sediment-related Disaster Risk Reduction; and 3: Glacier-related sediment and erosion hazard management); and (7) Brainstorming of the ISI governance structure.

During the meeting, Prof. Hongling Shi and Prof. Cheng Liu briefly introduced IRTCES and its activities, reviewed the history of ISI and its achievements and the contributions of IRTCES acting as the ISI Technical Secretariat, presented the relevant activities of IRTCES planned for the coming 2 years, and proposed potential future new case studies and training workshops for discussion. Prof. Manfred Spreafico and Prof. Des Walling presented and commented on the success, experiences and lessons learned from previous ISI activities and their implications for the future.

At the meeting, the Regional Coordinators and Thematic Coordinators were nominated, and the responsible focal points for the activities of the workplan for the implementation of the new ISI strategy during IHP-IX were decided.



Established in 2002, the ISI is a global initiative to assess erosion and sediment transport to marine, lake or reservoir environments, aimed at the creation of a comprehensive approach for the remediation and conservation of surface waters, intricately linking science with policy and management needs. ISI is one of the fifteen Flagship Initiatives approved by the Intergovernmental Council of the IHP, and an evaluation process finalized in 2022 concerning all Flagship Initiatives, highlighted ISI as one of the initiatives with the best governance and management during IHP-VIII. This meeting marks the launching of the new ISI strategy and its work plan for the IHP-IX and the creation of a new ISI Advisory Board with the ISI Global Secretariat located in IRTCES.

(Source: http://isi.irtces.org/isi/)

China touts water conservation model at World Water Forum

By Hou Liqiang | chinadaily.com.cn | Updated: 2024-05-20

China's water resources management strategy, which emphasizes water conservation, offers a potent solution to global water-related challenges, said Li Guoying, China's Minister of Water Resources, at the 10th World Water Forum in Bali, Indonesia, on Monday.

Addressing the Opening and Leaders' Meeting at the forum themed "Water for Shared Prosperity," Li outlined the four major water challenges facing the world: disasters, shortages and stresses, ecosystem degradation, and environmental damage.

In response to these pressing needs, President Xi Jinping proposed an innovative philosophy on water governance in 2014, Li said. This philosophy focuses on "prioritizing water conservation, balancing spatial distribution, adopting systematic approaches, and leveraging the roles of both government and market."

Under this guidance, China has made significant strides in water management. Despite doubling its GDP over the past decade, China maintained stable total water consumption through stringent water conservation policies, Li noted. Additionally, the country developed an efficient water network that has bolstered water supply capabilities and enhanced water security.

China's holistic approach to conservation and systematic governance — encompassing mountains, rivers, forests, farmlands, lakes, grasslands, and deserts — has rejuvenated many rivers, safeguarded lives and property, and minimized flood and drought losses.

Li emphasized that addressing water security and promoting shared prosperity are critical global tasks. He proposed that countries adopt President Xi's water governance philosophy to tackle water-related challenges and achieve harmonious coexistence with water.

Li highlighted the importance of prioritizing people's livelihoods by addressing the water challenges that impact them most, thereby enhancing their prosperity, contentment, and security. He also called for international cooperation in flood control, water and food security, and ecological safety to improve global water governance.

"Together with the international community, we are ready to sustain efforts to advance water governance and build a community of shared future for mankind," Li said.

The forum ran from Saturday to May 25.

(Source: China Daily)

China reports reductions in runoff and sediment in major rivers

2023 Gazette of River Sediment in China

China saw significant reductions in the volumes of runoff and sediment in its major rivers last year, according to a recent report from the Ministry of Water Resources.

In 2023, the general runoff volume recorded by representative hydrological stations on the country's major watercourses stood at 1,066 billion cubic meters, down by 25 percent from the multi-year average of 1,428 billion cubic meters, a media release from the ministry said on Wednesday.

If compared with the volume in 2022, the reduction in 2023 was 20 percent.

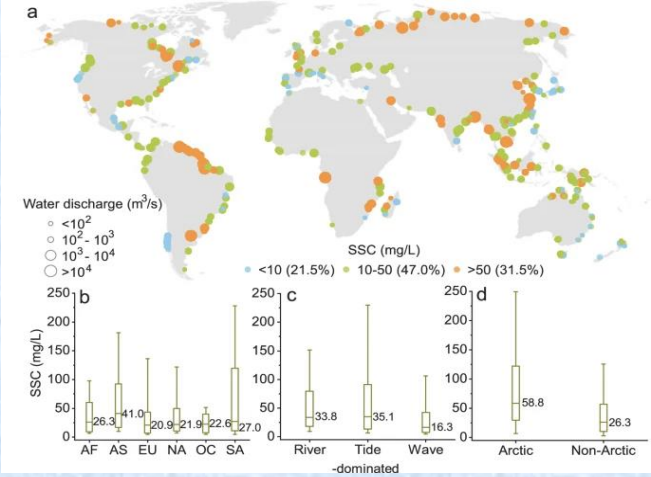
These representative stations reported a total of 204 million metric tons of sediment in 2023, compared with the multi-year average of 1.45 billion tons and 390 million tons in 2022.

The runoff of the Yangtze River, Asia's longest river, represented 63 percent of the total runoff volume registered in all representative hydrological stations last year.

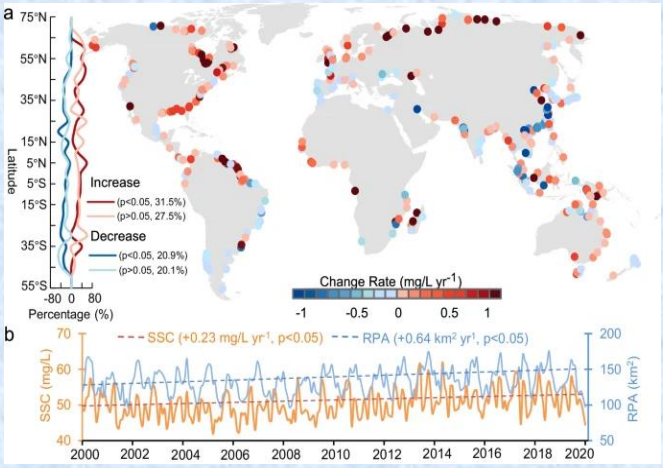
The representative stations on the Yellow River, the country's second-longest river, reported the highest density of sediment of 3.53 kilograms in every cubic meter of water.

(Source:https://www.chinadaily.com.cn/a/202405/23/WS664f3520a31082fc043c8c76.html)

Sustained increase in coastal suspended sediment concentrations near global river deltas over the past two decades



Global pattern of coastal suspended sediment concentration (SSC) between 2000 and 2020



Trends of coastal suspended sediment concentration (SSC) and river plume area (RPA) between 2000 and 2020

Abstract

River sediments play a critical role in sustaining deltaic wetlands. Therefore, concerns are raised about wetlands' fate due to the decline of river sediment supply to many deltas. However, the dynamics and drivers of suspended sediment near deltaic coasts are not comprehensively assessed, and its response to river sediment supply changes remains unclear. Here we examine patterns of coastal suspended sediment concentration (SSC) and river sediment plume area (RPA) for 349 deltas worldwide using satellite images from 2000 to 2020.

We find a global increase in SSC and RPA, averaging +0.46% and +0.48%/yr, respectively, with over 59.0% of deltas exhibiting an increase in both SSC and RPA. SSC and RPA increases are prevalent across all continents, except for Asia. The relationship between river sediment supply and coastal SSCs varies between deltas, with as much as 45.2% of the deltas showing opposing trends between river sediments and coastal SSCs. This is likely because of the impacts of tides, waves, salinity, and delta morphology. Our observed increase in SSCs near river deltas paints a rare promising picture for wetland resilience against sea-level rise, yet whether this increase will persist remains uncertain.

(Source: Hou, X., Xie, D., Feng, L. et al. Sustained increase in suspended sediments near global river deltas over the past two decades. Nat Commun 15, 3319 (2024).

https://doi.org/10.1038/s41467-024-47598-6)

Shift away from Nile incision at Luxor ~4,000 years ago impacted ancient Egyptian landscapes

Abstract

Although the Nile is one of the largest rivers in the world and played a central role in ancient Egyptian life, little is known about its response to climatic change during the Holocene. Here we present a framework for the evolution of the Egyptian Nile, demonstrating how climatic and environmental changes have shaped the landscape of the Egyptian Nile Valley over the past 11,500 years, including the civilization of ancient Egypt (~5,000 to 2,000 years ago). Using data from over 80 sediment cores drilled in a transect spanning the Nile Valley near Luxor, pinned in time by 48 optically stimulated luminescence ages, we reconstruct the dynamics of the Nile River during the Holocene in the vicinity of UNESCO World Heritage sites such as Karnak and

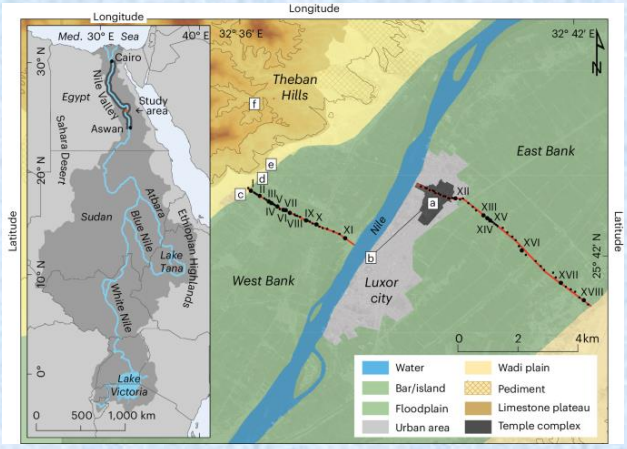
Luxor temples. According to our reconstruction, valley incision occurred from the start of the record until approximately 4,000 years ago and then rapidly shifted to massive floodplain aggradation. We argue that this relatively abrupt change in the riverine landscape near Luxor from the Middle to Late Holocene was linked to a shift towards a drier regional hydroclimate around this time. Such a dramatic change in river sediment dynamics could have had local agro-economic consequences.

Main

The River Nile forms the fertile corridor that links its headwaters in equatorial Africa to its delta in the Mediterranean. An understanding of its evolution through the Holocene is pivotal to discussions of fluvial system dynamics and ancient cultural development, which both occurred against a backdrop of major hydroclimatic change: that is, the shift from the 'Green Sahara' of the African Humid Period (~14.5–5.0 thousand years ago (ka)) to the present hyper-arid Sahara Desert. The present understanding of the Egyptian Nile's response to climate change relies heavily on data gathered from its delta, its offshore Mediterranean deep-sea fan and the Fayum depression. Few studies have focused on the fluvial domain itself, and very little is known about the Holocene development of the Egyptian Nile Valley despite its central role in ancient Egyptian history. Furthermore, previous research on the Egyptian Nile is often lacking detailed chronostratigraphic and sedimentological data that make existing reconstructions highly uncertain and inconsistent.

To address this knowledge gap, a transect of 81 boreholes spanning the Nile Valley (~10 km wide) was drilled near Luxor (ancient Thebes) in Upper Egypt. Sedimentary information from these cores (average depth ~8 m) was used to study key changes in the riverine landscape, which are pinned in time by 48 optically stimulated luminescence (OSL) ages. This approach provides a unique and vital understanding of the Holocene Egyptian Nile system and its responses to climate change at a focal region of ancient Egyptian culture. Our area of investigation includes UNESCO World Heritage sites such as the Karnak and Luxor temples located east of the present Nile and the royal cult temples and necropoleis on the western desert margin—places that were both physically and mythologically connected to the fluvial landscape. In addition, it is possible that the changing environment also impacted the regional agro-economy, which was of critical importance to the success of the ancient Egyptian state.

Our study shows how the floodplain environment changed dramatically during the Dynastic Period (~5.1–2.4 ka) and how the environmental canvas on which ancient culture developed, thrived and declined was reshaped. We introduce a framework for the Egyptian Nile near Luxor, while also filling in the looming gap in hydroclimatic information that exists between upstream and downstream locations within the Nile Basin.



Geomorphic map of the Nile Valley near Luxor, Egypt

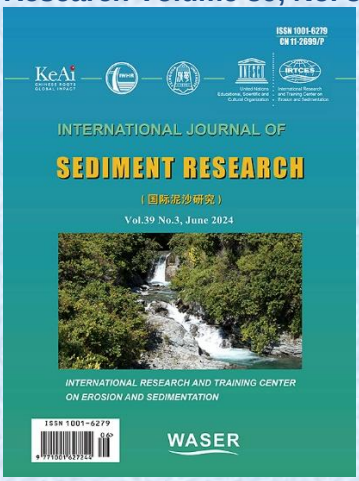
(Source: Peeters, J., Graham, A., Toonen, W.H.J. et al. Shift away from Nile incision at Luxor ~4,000 years ago impacted ancient Egyptian landscapes. Nat. Geosci. (2024). https://doi.org/10.1038/s41561-024-01451-z)

PUBLICATIONS

Contents of International Journal of Sediment Research Volume 39, No. 2, 2024

Volume 39, No.2, 2024
Pages 165-304 (April 2024)

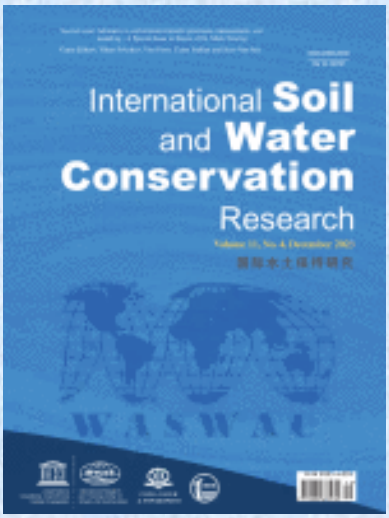
Contents of International Journal of Sediment Research Volume 39, No. 3, 2024)



Volume 39, Issue 3
Pages 305-494 (June 2024)

Full papers are available at ScienceDirect: https://www.sciencedirect.com/journal/international-journal-of-sediment-research with free access.

Contents of International Soil and Water Conservation Research (Vol. 12, No.2, 2024)



Volume 12, Issue 2
Pages 241-486 (June 2024)

Free full papers and open access are available at ScienceDirect : https://www.sciencedirect.com/journal/international-soil-and-water-conservation-research.

COMING EVENTS

River Flow 2024 (UK, Sep. 2-6, 2024)

Date: September 2-6 2024
Venue: Liverpool, UK
Summary: The 12th Conference on Fluvial Hydraulics under the auspices of IAHR, River Flow 2020, will be held in September 2-6 2024 at Liverpool, UK. Organized since 2002 under the auspices of the Fluvial Hydraulics Committee of the International Association for Hydro-Environment Engineering and Research (IAHR), the River Flow Conference Series has become one of the main international forum for dissemination of research and industrial practice on fluvial hydraulics and river engineering. Following on the tradition and success of previous editions of River Flow conferences, River Flow 2024 will feature a day devoted to Master Classes for young researchers, daily keynote lectures, ample time for the presentation and discussion of accepted contributions (full papers and extended abstracts), and the presentation of the Stephen E. Coleman Award distinguishing the best paper first authored by a young researcher.

Topics:
The conference will as well cover issues related, but not limited to:
1. River morphodynamics and management
2. Hydraulic structures and impacts on local and catchment sediment transport, flow regime and ecology
3. Sediment, pollutant and microplastic dynamics in rivers
4. Fluid Mechanics, numerical modelling and two-phase flow
5. Climate change and adaptation
6. Monitoring techniques and AI?

URL: https://www.ljmu.ac.uk/conferences/river-flow
Contacts:
If you have questions, please do not hesitate to e-mail or call:RF2024@ljmu.ac.uk.
Dr Iacopo Carnacina
Email:i.carnacina@ljmu.ac.uk

28th ICOLD Congress & 93rd Annual Meeting (China, May 16-23, 2025)

Date: May 16-23, 2025
Venue: Chengdu, China

Theme： Common Challenges, Shared Future, Better Dams
Topics:
T1: Precautionary management of dams and river basin under climate change
T2: Multifunctional development of dams and reservoirs
T3: Technologies for dam construction under complex (extreme) conditions
T4: Digital technology applied in dams and digital river basins
T5: The role of dams in achieving the goal of reducing carbon dioxide emissions

URL: https://www.icold-cigb2025.com/
Contact:
Email:icoldcigb2025@outlook.com;icoldcigb2025@iwhr.com

41st IAHR World Congress "Innovative Water Engineering for Sustainable Development" (Singapore, 22-27 June 2025)

Date: June 22 to 27, 2025
Venue: Singapore
Organizers: IAHR, Singapore's National Water Agency, National University of Singapore, Nanyang Technological University
Summary: The International Association for Hydro-Environment Engineering and Research (IAHR) World Congress is a biennial event that brings together the latest technical and scientific knowledge, practice, trends, and innovations of the global hydro-environment community. Themed “Innovative Water Engineering for Sustainable Development”, the 41st IAHR World Congress in Singapore will focus on the importance of innovative water engineering towards meeting the Sustainable Development Goals (SDGs) and targets related to water resources. Held amid the International Decade for Action on “Water for Sustainable Development” 2018–2028, by the UN, the Congress will showcase the role of expert knowledge by the water engineering community to the implementation of innovation solutions to meet the SDGs, and share insights on research, technology and innovations that will create significant impact to tackle global challenges such as climate change and sea level rise.
Theme: Innovative Water Engineering for Sustainable Development
Topics:
1. Coastal Flooding and Protection
2. River and Sediment Engineering
3. Eco- and Environmental Hydraulics
4. Hydraulic Structures
5. Integrated Water Resources Management
6. Urban Water Management
7. Flood and Drought Management
8. Groundwater Management

9. Remote Sensing and Field Measurements
10. Computational and Experimental methods
11. Data-Driven Methods and Machine Learning (Hydroinformatics)
12. Digital water
13. Nature-based solutions

Climate mitigation and adaptation
UCL: https://2025.iahr.org/
Email: fulvia_wong@pub.gov.sg

16th International Symposium on the Interactions between Sediments and Water (France, 30 June–4 July, 2025)

Date: 30th June to 4th July 2025

Venue: Le Touquet, France

Website: https://iasws2025.univ-lille.fr/

Main conference topics:

1. Assessing and restoring disturbed catchments
2. Biogeochemistry in the hyporheic zone
3. Biogenic influences on sediment–water interactions from micro to macro scale
4. Carbon budgets and blue carbon ecosystems

5. Coastline, coastal erosion and solutions
6. Emerging contaminants in sediments
7. Extreme events and environments (droughts, floods, wildfires etc.)
8. Modelling suspended particles and aquatic sediments
9. Rewilding and restoration of coastal areas
10. Sediment management
11. Sediment-associated nutrients and contaminant processes
12. Water quality and organic matter along the watershed–river–sea continuum
13. Other topics related to sediment–water interactions

16th International Symposium on River Sedimentation (United States, August, 2025)

Date: August, 2025 (exact dates will be released soon)
Venue: Omaha, Nebraska, United States

Theme: Centennial of Modern Sediment Transport Mechanics
Topics:

1. Fundamentals for sediment transport (Boundary layer flow, fluvial Hydraulics, and Hydrology)
2. Fundamentals of sediment transport (Bed forms, bed load, and suspended load)
3. Experimental and computational sediment transport and fluvial processes
4. Watershed hydrology and sedimentation
5. River Erosion and sedimentation (case studies)
6. Scours abound hydraulic structures (case studies)
7. Reservoir sedimentation
8. Estuarine and coastal sediment transport
9. Seabed sediment transport
10. Environmental and ecological sediment with climate changes

INTERNATIONAL SEDIMENT INITIATIVE (ISI)

Intergovernmental Hydrological Programme (IHP)

UNESCO

UNESCO IHP SECRETARIAT

Abou Amani	UNESCO, Paris
(to be confirmed)	UNESCO, Beijing
Koen Verbist	UNESCO, Paris
Siying Tan	UNESCO, Paris

ISI SCIENTIFIC ADVISORY BOARD

Regional Coordinators
(to be confirmed)

Thematic Coordinators
(to be confirmed)

ISI URL: http://www.irtces.org/isi/

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ISI Global Secretariat
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