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Intergovernmental Hydrological Programme

INTERNATIONAL SEDIMENT INITIATIVE

NEWSLETTER

Reporting ISI news to you quarterly

No. 75 July 7, 2025

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NEWS

50th Anniversary of the UNESCO Intergovernmental Hydrological Programme

The UNESCO Intergovernmental Hydrological Programme celebrated its 50th anniversary from 10-13 June, 2025, with panel discussions and other events at the UNESCO HQ in Paris.

Water science and management are key pillars of UNESCO's mandate for sustainable development, covering vital aspects of human wellbeing and environmental protection. UNESCO's broad approach spans areas such as groundwater assessment and drought monitoring, supporting improved water resource management at local and transboundary levels. The UNESCO Intergovernmental Hydrological Programme (IHP) is the main vehicle for addressing today's water challenges, drawing on a wide network of experts and specialized Centres.

As the United Nations' sole intergovernmental programme dedicated to water research and management, the IHP facilitates international cooperation on water-related challenges. Following its establishment in 1975, as the successor to the International Hydrological Decade, the programme has undergone significant evolution, transitioning from a focused hydrological science initiative to a comprehensive, integrated, and transdisciplinary water sciences programme. The programme's operational framework encompasses 29 water-related Centres, 93 UNESCO water-related Chairs, and 170 National Committees and 17 Flagship Initiatives, facilitating effective knowledge transfer between scientific research and practical implementation.

Audrey Azoulay, Director General of UNESCO, and others attended the highlevel event and presented opening remarks. Leaders from relevant UN agencies, more than 10 national ministries, Presidents of international organizations, members of the UNESCO water family, and members of the global water science community attended the meeting. Mr. Liu Zhiyu, Director General of the Department of Hydrology of the \China Ministry of Water Resources and Prof. Peng Jing, President of the China Institute of Water Resources and Hydropower Research (IWHR) and Director of IRTCES attended the meeting.

In the opening session, Ms. Audrey Azoulay, Director General of UNESCO, and Mr. Sirojiddin Muhriddin, Minister of Foreign Affairs of Tajikistan, delivered opening remarks, emphasizing the common water challenges facing the globe, stressing the important role of the UNESCO IHP as a platform for solving water issues and advancing the water-related goals of the United Nations Sustainable Development Agenda, and discussing future water development strategies and cooperation. The Ministerial Roundtable was held on the theme of Water.

The theme of the Ministerial Round Table was "Water Science: For Life, Prosperity and Peace". Ministerial guests and delegates made presentations on the important role of the UNESCO IHP in the field of water and the relevant water strategies in their countries.

The conference presented the UNESCO IHP Long-Term Outstanding Contribution Award, and the International Research and Training Center on Erosion and Sedimentation, the first UNESCO Category 2 Center in the world, received the award.

From Scientific Frontiers to Water Action – Side Event of the 50th Anniversary of the IHP – held at the UNESCO Headquarters in Paris on June 12. 2025.

'From Scientific Frontiers to Water Action'– one of the Side Events of the 50th Anniversary of the IHP– was held at the UNESCO Headquarters in Paris on June 12, 2025. This side event, organized by the People's Republic of China in partnership with UNESCO and Water Family members, highlighted achievements and explored scientific frontiers to identify emerging challenges, opportunities, and prospects in the science of hydrology. These discussions contributed to the implementation of IHP-IX. The main objective of this Side Event was to assess and identify the scientific challenges and frontiers of water sciences, as well as the translation of science into practical applications, including the way forward for the IHP. The event also examined available data and national capacities for conducting scientific assessments of hydrology in Member States.

Ms. Lidia Brito, Assistant Director-General for Natural Sciences, UNESCO; and Ms. YANG Xinyu, Chinese Ambassador and Permanent Delegate of the People's Republic of China to UNESCO attended the event and delivered opening remarks. Ambassador Representatives from Austria, Luxembourg, Myanmar, DPRK, Kazakhstan, Iraq, Morocco and other member states participated in the event and presented remarks. Over 130 participants from UNESCO member states, UNESCO IHP National Committees, UNESCO Category II Centers and Chairs, other international organizations, institutes, and universities. The Opening was moderated by Mr. Shahbaz Khan, Director and Representative, UNESCO Regional Office for East Asia.

Keynote speeches included:

Science of Hydrology: From Scientific Frontiers to Application through the IHP, Mr. Anil Mishra, Chief of the Hydrological Systems, Climate Change and Adaptation Section, UNESCO IHP;

Frontiers of Water Sciences in China, Ms. PENG Jing, President of the China Institute of Water Resources and Hydropower Research (IWHR) and Director General of IRTCES;

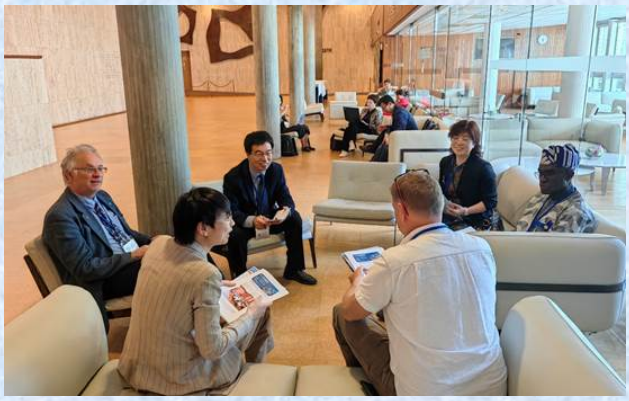
Water Science for Resilience and Sustainability, Mr. Matjaz Mikos, Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia;

History and Development of Hydrology in China, Mr. LIU Zhiyu, Director General of Department of Hydrology, Ministry of Water Resources, Chair of UNESCO IHP National Committee of the P. R. China

The Panel Discussion with the topic of 'Frontiers in water sciences and the way forward towards water action, water education, and water culture' was moderated by Mr. Abou Amani, Director, Division of Water Sciences and Secretary, UNESCO IHP. Mr. Helmut Habersack, UNESCO IHP Chairperson, President of WASER, University of Natural Resources and Life Sciences Vienna; Mr. Harald Koethe, Director of International Centre for Water Resources and Global Change (ICWRGC); Mr. David Hannah, University of Birmingham, UNESCO Chair in Water Science; Mr. Toshio Koike, Director, UNESCO International Center for Water Hazard and Risk Management (ICHARM); and Mr. Omogbemi Omoloju Yaya, Director of the Regional Centre for Integrated River Basin Management, participated in the discussions.

The side event was organized by China Institute of Water Resources and Hydropower Research (IWHR); IRTCES; UNESCO IHP; the Chinese National Committee for the UNESCO IHP; the UNESCO Regional Office for East Asia; the National Key Laboratory for the Water Cycle in River Basins and Water Security; Nanjing Hydraulic Research Institute (NHRI); and Hohai University, and co-organized by the International Center for Water Hazard and Risk Management (ICHARM); the Regional Centre for Integrated River Basin Management; the International Centre for the Integrated Management of Watershed and Bio-Resources in Arid and Semi-Arid Regions (ICIMWB); the International Association for Hydro-Environment Engineering and Research (IAHR); and the World Association for Sedimentation and Erosion Research (WASER).

ISI Advisory Board members met at UNESCO Headquarters in Paris on June 12, 2025



The 50th anniversary event of the Intergovernmental Hydrological Programme (IHP) of UNESCO was held at UNESCO Headquarters in Paris from June 10-13, 2025. During the event, the ISI Global Secretariat convened a meeting of the ISI Scientific Advisory Board. Participants included: Ms. Tan Siying, IHP Secretariat of UNESCO; Prof. Zhang Jianli, Deputy Director of IRTCES; Prof. Shi Hongling, Head of the ISI Global Secretariat and Division Chief of IRTCES; Prof. Matjaz MIKOS, ISI Regional Coordinator for Eastern Europe, and Professor at the University of Ljubljana, Slovenia; Prof. William Blake, Team Leader of the ISI Priority Area Working Group on Erosion and Sediment Transport, and Professor at Plymouth University, UK; Prof. O.O. Yaya, ISI Regional Coordinator for Africa, and Director of the UNESCO Regional Centre on Integrated River Basin Management; and Mr. An Chenge, Senior Engineer from the China Institute of Water Resources and Hydropower Research. The face-to-face meeting was chaired by Prof. Shi Hongling.

Ms. Tan Siying opened the session by expressing gratitude on behalf of the IHP Secretariat for the successful convening and hoped that everyone would cherish this opportunity for face-to-face exchanges and encouraged open dialogue. Prof. Shi Hongling reviewed recent activities of the ISI Global Secretariat, and chaired lively discussions. Participants shared regional perspectives and research priorities, affirming their commitment to ISI's activities and knowledge-sharing. Constructive suggestions focused primarily on standardizing sediment data collection protocols—one of the key ISI objectives. The focused and well-organized discussions fostered strong collaboration and provided strategic guidance for ISI's future development.

Workshop on Challenges and Countermeasures of Global Reservoir Sedimentation Successfully Held

The workshop on Challenges and Countermeasures of Global Reservoir Sedimentation

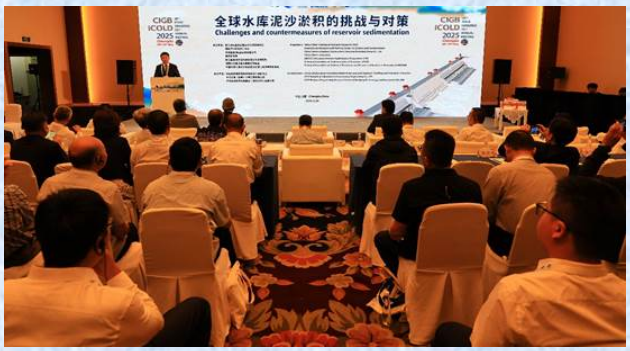
On May 20, 2025, a Workshop on Challenges and Countermeasures of Global Reservoir Sedimentation was held in Chengdu, Sichuan Province, as an International Sediment Initiative (ISI) event at the 28th Congress and 93rd Annual Meeting of the International Commission on Large Dams (ICOLD), in conjunction with the IHP's 50th anniversary celebration.

The workshop was jointly hosted by the Yellow River Institute of Hydraulic Research (YRHR) of the Yellow River Conservancy Commission (YRCC), the International Research and Training Center on Erosion and Sedimentation (IRTCES) under the auspices of UNESCO, China Communications Construction Company Dredging Group Co., Ltd. (CCCC Dredging Group), the Intergovernmental Hydrological Programme (IHP) of UNESCO, the ICOLD Technical Committee on Reservoir Sedimentation and others.

More than 100 Representatives from the Ministry of Water Resources of China, domestic and international research institutions, universities, enterprises, and water-related international organizations participated in the event.

In the opening session, Mr. Qun Li stated that climate change has become one of the most severe challenges facing the world in recent years. Against this backdrop, reservoir sedimentation has triggered a series of ecological and environmental issues, evolving into a global concern. He expressed hope that through exchanges of theoretical achievements, technological innovations, and practical explorations of reservoir sediment reduction and dredging, participants could reach important consensus, formulate feasible and replicable governance models and policy recommendations, and establish cross-departmental and cross-regional collaboration networks to collectively contribute wisdom and

strength to global reservoir sedimentation management. The opening session was chaired by Mr. Xiangyang Wei, Chief Engineer of the YRCC.



Mr. Qun Li, Deputy Director of the YRCC, delivering opening speech

Mr. Hamid Nouri, Director of the International Center for Integrated Management of Water Resources and Biodiversity in Arid and Semi-arid Regions (ICIMWB) under the auspices of UNESCO; and Mr. Zhang Jianli, Deputy Director of IRTCES chaired the keynote speech session and invited speech session, respectively.

Mr. Hamid Nouri, Chair of the Keynote Speech Session

Mr. Jianli Zhang: Chair of the Invited Speech Session

The keynote speeches and invited speeches were delivered by Mr. Xin Yu, President of YRHR; Mr. Martin J. Teal, President and Principal Engineer of WEST Consultants and former Chairman of the Sedimentation Committee of ICOLD; Mr. Nikolaos Efthymiou, Sediment Management Expert, World Bank; Mr. Aissa Mellal, Senior Dam Specialist, World Bank; Mr. Qingbo Zhang, Vice President of the CCCC Dredging Group.; Mr. Jinyou Lu, Former President of the Changjiang River Scientific Research Institute (CRSRI); and Mr. Qingchao Guo, Professor at the China Institute of Water Resources and Hydropower Research (IWHR).

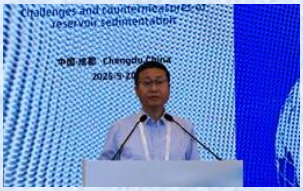
Their reports covered the latest research achievements in areas such as the mechanisms of reservoir sedimentation, monitoring technologies for sediment movement, and technologies and equipment for reservoir sediment reduction and dredging. These presentations provided important references for exploring effective strategies to address global reservoir sedimentation risks by integrating cases from China and other countries in reservoir sedimentation reduction and sediment utilization.

Mr. Xin Yu: Whole-Process Technologies for Lake and Reservoir Dredging

Mr. Martin J. Teal: The Global Challenges of Reservoir Sedimentation

Mr. Nikolaos Efthymiou: Screening of Reservoir Sedimentation Management Alternatives

Mr. Aissa Mellal：Exploit the Potential of Existing Dams and Reservoirs



Mr. Qingbo Zhang: Dredging Technologies and Equipment

Mr. Jinyou Lu: Reservoir Desilting and Sediment Resource Utilization in the Yangtze River Basin

Mr. Qingchao Guo: Reservoir Sedimentation: Storage Loss Rate and Alleviation Measures

A panel discussion with the theme of "Global Reservoir Sedimentation Risks and Governance Strategies" was attended by Ms. Zhang Wenjie, Director of the Operation and Management Department of the Ministry of Water Resources of China; Mr. Martin J. Teal; Mr. Sayed Hamidreza Sadeghi, Vice President of the World Association of Soil and Water Conservation and Professor at Tarbiat Modares University, Iran; Mr. Zhang Qingbo; and Ms. Jiang Enhui, Honorary Director of the CDES Committee on Reservoir Sediment Treatment and Resource Utilization. This session was moderated by Mr.Yuanjian Wang, Director of the Institute of Lakes and Reservoirs at the YRHR.

Panel discussion "Global Reservoir Sedimentation Risks and Governance Strategies"

The panelist delved into specific pathways for advancing global reservoir sedimentation governance from perspectives including policy support, technological innovation, and international cooperation.

Why do the riverine sediment flux trends of the Qinghai-Tibet plateau bifurcate?

The Qinghai-Tibet Plateau, known as the “Water Tower of Asia” and the source region of several major rivers, nurtures the Yangtze, Yellow, Mekong, Nu, and Yarlung Tsangpo rivers. Over the past 60 years, temperatures and precipitation in the whole region have been rising, yet sediment flux trends have bifurcated: some rivers have seen sediment fluxes double, while others show a steady decline.

The core paradoxes are:

(1) Theoretically, increased precipitation should have enhanced erosion, thus, producing more sediment, but why have some rivers become clearer despite wetter conditions?

(2) Rising temperatures should have melted the permafrost and made the land softer, but why has the soil in some regions become more stable despite warmer climate?

The clear Niyang River discharging into the turbid Yarlung Tsangpo River, showing different trends in sediment flux (Photo by Prof. Zhiwei Li, August 2024)

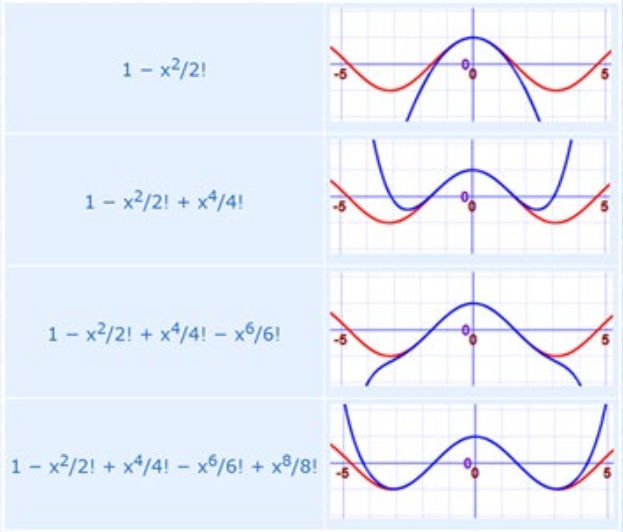
1. Peeling off the “onion skin” of sediment yield processes on the Qinghai-Tibet Plateau using the Multi-order Multivariate Climate Elasticity Model and reconstructing the flux series.

Traditional methods for quantifying sediment production either introduce too many parameters by detailing physical mechanisms, which is difficult to apply over large areas, or oversimplify the process based on statistical analysis, omitting critical mechanisms. A joint team from Wuhan, Sichuan, Beijing Normal, Colombia, Edinburgh, and Plymouth universities drew inspiration from the Taylor expansion in calculus: regardless of the true form of the sediment production process, when iteratively adding key influencing factors as power series within a convergent domain, we can ultimately approximate the true form

$$\Delta Y=f'(X)\cdot\Delta X+\frac{f''(X)}{2!}\cdot\Delta X^2+\cdots+\frac{f^k(X)}{k!}\cdot\Delta X^k+\cdots+\frac{f^N(X)}{N!}\cdot\Delta X^N+R_N(X) \quad (1)$$

$$\Delta Y=\sum_{i=1}^{n}\Delta X_i\frac{\partial f}{\partial X_i}+\sum_{k=2}^{N}\frac{1}{k!}\sum_{m_1\cdots m_k=1}^{n}\Delta X_{m_1}\cdots\Delta X_{m_k}\frac{\partial^k f}{\partial X_{m_1}\cdots\partial X_{m_k}}+R_N(X_1,\cdots X_n) \quad (2)$$

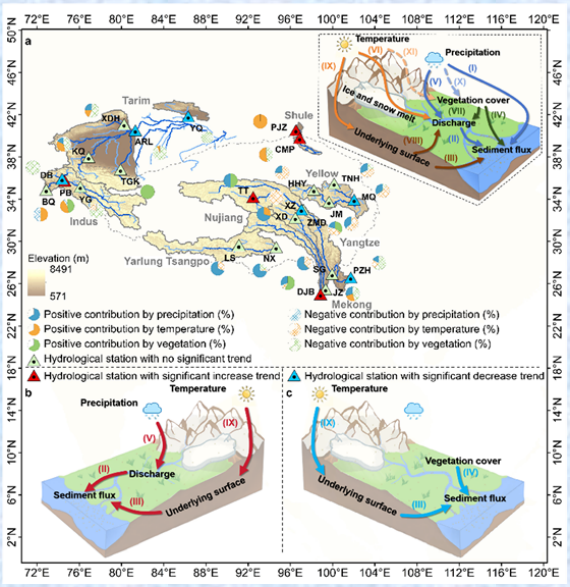
Single-variable Taylor expansion (Equation 1) and multivariable Taylor expansion (Equation 2).



Using the function cos(x) as an example to illustrate how the Taylor series approximates the true value within the convergent domain

Building on this concept, the team developed the Multi-order Multivariate Climate Elasticity Model. This model identifies the key factors influencing sediment yield on the Qinghai-Tibet Plateau and quantifies the contributions of major physical pathways driving sediment changes. It also overcomes the data limitation of traditional methods by using data that are relatively easy to obtain over large areas.

Meanwhile, the key pathways and controlling factors for sediment flux changes have been quantified —In basins with an increasing sediment flux trend, the major pathways include increased soil erodibility due to permafrost thaw (Pathways IX ~ III) and increased runoff from increased precipitation (Pathways V ~ II). In basins with a decreasing sediment flux trend, the leading pathways are sediment retention due to vegetation expansion (Pathway IV) and surface changes driven by rising temperatures (Pathways IX ~ III). Basins where precipitation, temperature, and vegetation cover are the primary controlling factors account for 16%, 36%, and 48% of the total, respectively.

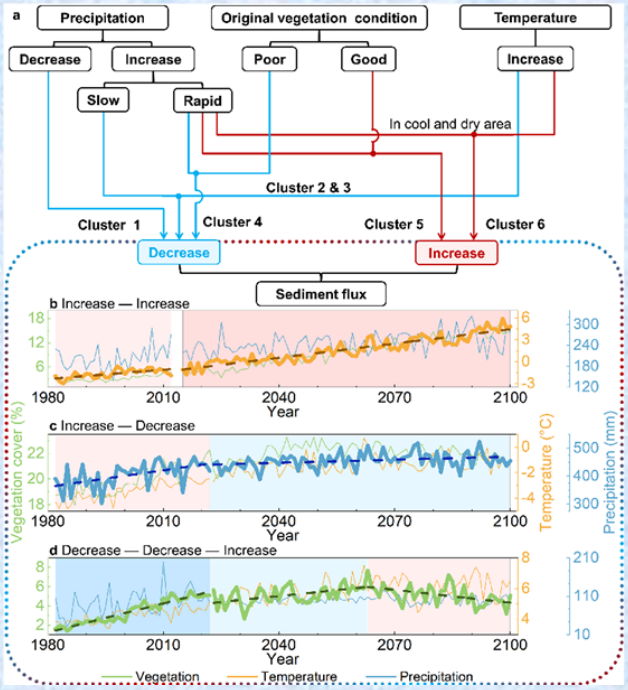


Sediment flux trends and contributions of major pathways in Qinghai-Tibet Plateau rivers

2. The switch for the bifurcation of sediment flux trends lies in the “Tug-of-War” between original vegetation condition and precipitation growth rate.

The original vegetation condition and precipitation growth rate are the key factors causing the divergent trends in sediment flux. If precipitation decreases or increases slowly, sediment flux may decline. On the other hand, when precipitation increases rapidly, the original vegetation condition often determines the trend in sediment flux: in areas where the vegetation cover fraction is originally low, warmer and wetter conditions stimulate fast spread of vegetation, stabilizing soil and reducing sediment yield; in areas where vegetation cover is already well-established, the marginal conservation effect of vegetation becomes limited, and sediment flux may continue to increase. It implies that sediment flux trends of certain river basins on the Qinghai-Tibet Plateau may reverse due to changes in precipitation growth rates and vegetation cover in the future.

This study was published on February 7 in Communications Earth & Environment, a cross-disciplinary, open-access journal within the Nature portfolio, under the title “Original vegetation condition and precipitation growth rate bifurcate sediment flux trend on the Qinghai-Tibet Plateau”. The research provides an in-depth analysis of the mechanisms behind sediment flux changes in major Qinghai-Tibet Plateau rivers. By innovatively setting up the Multi-order Multivariate Climate Elasticity Model, it clarifies the complex impacts of precipitation, temperature, and vegetation cover on sediment flux changes and their interactions, systematically explains trend bifurcation, and provides a theoretical foundation for predicting sediment flux under climate change. The findings offer critical insights for water resource management and ecological conservation in global alpine regions.



Driving factors and future projections of bifurcated sediment flux trends.

https://doi.org/10.1038/s43247-025-02075-w

Citation: Guo J., Yue Y., Huai W., Yan X., Borthwick A.G.L., Chai Y., Li S., Li Z., Wang Z., Miao C. and Yang Z. (2025) Original vegetation condition and precipitation growth rate bifurcate sediment flux trend on the Qinghai-Tibet Plateau. Communications Earth & Environment, 6(90). 10 pages.

Lake sediment analysis of Holocene warming trend, decoding 10,400 years of tropical Australasia's climate

by Li Yali, Chinese Academy of Sciences
edited by Lisa Lock, reviewed by Robert Egan

Understanding how Earth's climate has naturally fluctuated during the Holocene—the current geological epoch spanning the last 11,700 years—is crucial for contextualizing modern human-driven warming and improving future climate projections. However, the climate history of tropical Australasia has remained unclear, with scientists often divided over interpretations of paleoclimate records.

To investigate this, a research team led by Prof. Zhang Enlou from the Nanjing Institute of Geography and Limnology at the Chinese Academy of Sciences analyzed "molecular fossils"—branched glycerol dialkyl glycerol tetraethers (brGDGTs)—preserved in the sediments of Girraween Lagoon. These organic compounds serve as precise paleothermometers when properly calibrated. This study was published in the journal CATENA.

Using a specific calibration for tropical lakes, the researchers reconstructed mean annual air temperatures over the past 10,400 years. Their results revealed a steady warming trend of 2°C throughout the Holocene. This warming trend aligns with other land temperature records, alkenone-derived ocean temperature data, and climate models for the region.

Interestingly, it diverges from estimates based on magnesium-to-calcium ratios in planktonic fossils, highlighting ongoing debates about the reliability of different proxy methods.

In addition to temperature changes, the sediments indicated an environmental transformation. Over millennia, the lagoon became increasingly acidic. This acidification resulted from two main factors: first, declining rainfall in northern Australia reduced the inflow of alkaline groundwater from limestone sinkholes beneath the lake; second, decaying organic matter in the sediments increased acid production. Together, these processes altered the lagoon's chemistry.

Furthermore, by correlating their data with regional climate records, the researchers traced these changes to intensifying El Nino-Southern Oscillation (ENSO) activity. As ENSO variability increased, tropical Australasia transitioned from cool and wet conditions to the warmer, drier climate we see today, characterized by stark seasonal contrasts.

This dual reconstruction of temperature and pH not only resolves long-standing scientific contradictions but also provides a comprehensive framework for understanding how ocean-atmosphere interactions, hydrology, and biogeochemical cycles collectively shaped the region's climate history. These insights are critical for refining models that predict how tropical climates may respond to future global warming.

"Lake sediments are like nature's history books," said Prof. Zhang. "By interpreting their chemical signatures, we are better prepared for the climate challenges ahead."

More information: Weiwei Sun et al, Holocene climate changes in tropical Australasia based on branched tetraether lipid evidence from Girraween Lagoon, northern Australia, CATENA (2025). DOI: 10.1016/j.catena.2025.109124

Citation: Lake sediment analysis Holocene warming trend, decoding 10,400 years of tropical Australasia's climate (2025, May 22) retrieved 22 May 2025 from https://phys.org/news/2025-05-lake-sediment-analysis-holocene-trend.html

(Source: https://phys.org/)

Rescheduling of the 16th ISRS to December 2025

Dear Colleagues and Participants,

Thank you for your continued support of the 16th International Symposium on River Sedimentation (ISRS), hosted by the University of Nebraska–Lincoln. We are pleased to have received over 100 high-quality abstracts addressing a wide range of topics, including sediment transport modeling, watershed management, and ecological restoration.

In recent months, evolving visa and entry policies—largely influenced by international tariff adjustments— have introduced uncertainties for many of our participants. After careful monitoring and deliberation, the organizing committee has made the difficult decision to reschedule the symposium to ensure broader accessibility and participation.

We are pleased to announce that the 16th ISRS will now be held from December 14–17, 2025. In light of this change, we have extended the abstract submission deadline to September 30, 2025. Acceptance notifications will be sent out shortly, and updated deadlines and details will be posted on our official website: https://isrs2025.iahr.org/.

We remain committed to making the 16th ISRS a dynamic and enriching platform for the exchange of ideas, research, and innovations in sediment science and management.

We sincerely appreciate your understanding and continued engagement. For any urgent questions, please feel free to contact us at jguo2@unl.edu or waser@iwhr.com

Warm regards,

Dr. Junke Guo
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College of Engineering University of Nebraska–Lincoln.
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PUBLICATIONS

Contents of the *International Journal of Sediment Research* (Volume 40, No. 3, 2025)

Pages 385-536 (June 2025)

Assessment of soil erosion dynamics and implications for sustainable land management: A case study using the RUSLE model
Lu Zhang, Muhammad Haseeb, Zainab Tahir, Aqil Tariq, ... Walid Soufan
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Submerged macrophyte-dominated systems fed by karst groundwater produce a significant autochthonous carbon sink in sediment: A mesocosm experiment study
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On the parameters of common settling velocity models for porous sediment aggregates
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Multidecadal analysis of erosion susceptibility in a watershed heavily impacted by deforestation in southeastern Amazonia
Edilson Freitas da Silva, José Tasso Felix Guimarães, Gabriel Negreiros Salomão, Prafulla Kumar Sahoo, ... Roberto Dall'Agnol
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Complex morphodynamic processes of a large braided channel in response to different flood flow discharges on the Qinghai-Tibet Plateau
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Experimental study on the self-cleaning behavior of slit dams for debris flow hazard mitigation
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Assessment of infiltration and erosion rates in Mediterranean reservoirs' catchments through rainfall simulation
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Evaluation of eco-friendly soil slope stabilization techniques for forest roads by using an Artificial Neural Network (ANN)
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Efficiency of four types of biochar to improve soil properties and decrease soil detachment in vulnerable hillslopes to rill erosion
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Contributions of flow discharge, slope gradient, and scouring time on rill erosion: A quantitative study of exposed slopes in the loess region
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Probabilistic risk assessment of fifteen metal(loid)s and their mixtures in surface sediment of Hongze Lake (China) using the diffusive gradients in thin films (DGT) technique
Changjiang Ma, Yang-Guang Gu, Richard W. Jordan, Shi-Jun Jiang, Meirong Wang
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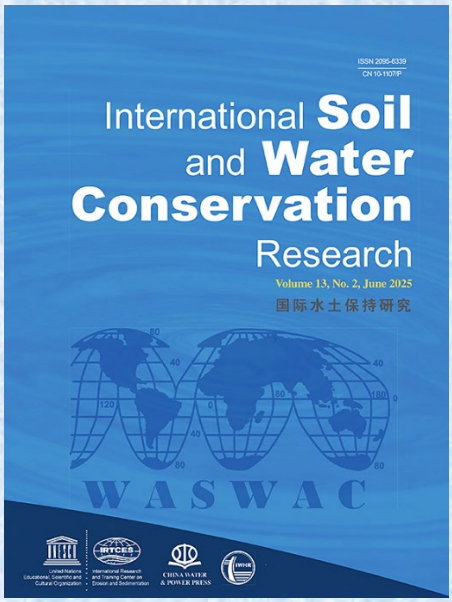
Simulating fluvial sediment pulses using remote sensing and machine learning: Development of a modeling framework applicable to data rich and scarce regions
Abhinav Sharma, Celso Castro-Bolinaga, Natalie Nelson, Aaron Mittelstet
Pages 523-536

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. 13, No.2, 2025)



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COMING EVENTS

The 16th International Symposium on River Sedimentation (USA, December 14-17, 2025)

Date: December 14-17, 2025
Venue: Omaha, Nebraska, United States
Summary: The triennial International Symposium on River Sedimentation (ISRS) was initiated in 1980. Since its foundation, IRTCES has served as the permanent secretariat of ISRS. WASER was inaugurated at the 9th ISRS in 2004, and the ISRS has since become the official symposium of WASER. The objective of the ISRS is to provide a forum for scientists, engineers, researchers and decision makers to exchange ideas, research results and technical advances, and to share experience and information related to the study of sediment and its management.
Organizer: University of Nebraska-Lincoln
Sponsors: World Association for Sedimentation and Erosion Research (WASER), International Research and Training Center on Erosion and Sedimentation (IRTCES)
Co-Sponsors: International Association for Hydro-Environment Engineering and Research (IAHR).(to be invited)
Secretariat: University of Nebraska-Lincoln
Permanent Secretariat: IRTCES
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 erosion 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 sediments with climate changes
URL: https://www.isrs2025.org/
Organization & Contacts:
Prof. Junke (Drinker) Guo
Department of Civil and Environmental Engineering
University of Nebraska—Lincoln
jguo2@unl.edu

The 12th International Conference on Scour and Erosion (China, November 4-7, 2025)

Date: November 4-7, 2025
Venue: Chongqing, China
Summary: The International Conference on Scour and Erosion (ICSE) was established in 2002, and has been run by the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) Technical Committee on Scour and Erosion TC213 (Chair: Shinji Sassa). The first conference was held in College Station Texas, USA (2002), followed by Singapore (2004), Amsterdam, Netherlands (2006), Tokyo, Japan (2008), San Francisco, USA (2010), Paris, France (2012), Perth, Australia (2014), Oxford, UK (2016), Taipei China Taiwan (2018), Virtual, USA (2021) and Copenhagen, Denmark (2023). The forthcoming conference will be held in Chongqing, China, in November 2025. The goal of this conference is to bring together researchers, engineers and managers to share their latest findings on Scour and Erosion. This conference is an excellent platform for presenting your researches, ideas, technology advancements and engineering achievements.
Host Organizers: Chongqing Jiaotong University & Hohai University
Co-organizer: World Association for Sedimentation and Erosion Research (WASER)
Theme: Advancement of Scour and Erosion for sustainable development
Topics:
1. Mechanics of Internal Erosion
2. Sediment Transport
3. Effects of Geology on Internal Erosion
4. Rock Scour
5. Erosion and Structures
6. River, Coastal, Estuarine and Marine Scour and Erosion
7. Numerical Modelling of Scour and Erosion
8. Physical Modelling of Scour and Erosion
9. Scour and Erosion Monitoring and Measurement
10. Watershed Scale Soil Erosion, Restoration, and Conservation
11. Scour and Erosion Countermeasures and Mitigation
12. Geo-Hazards Induced by Scour and Internal Erosion
13. Erosion Risk Assessment
14. Case Histories, Lessons Learned, and General Practice
15. Impact and Adaptation
URL: https://icse12.cqjtu.edu.cn/
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The 6th WASWAC World Conference (Morocco, September 15-17, 2025)

Date: September 15-17, 2025
Venue: Rabat, Morocco
Summary: The World Association for Soil and Water Conservation (WASWAC), in collaboration with the Institut National de la Recherche Agronomique (INRA), is organizing the 6th WASWAC World Conference on Resilient Landscapes: Innovations and Traditions in Climate-Adaptive Soil and Water Conservation (RISE-SWC), scheduled from 15 to 17 September 2025 in Rabat, Morocco. The conference will provide an exchange platform for soil and water resources conservation on a global scale, fostering collaboration among scientists, experts, policymakers, and practitioners from around the world. The RISE-SWC conference will explore cutting-edge strategies in the context of climate change and propose practical solutions to provide strong support for addressing global climate change challenges. Participants will engage in discussions on innovative practices, integrating traditional wisdom with modern technologies, and addressing social and economic challenges. The conference aims to propose actionable

solutions that can strengthen global efforts to combat climate change impacts on soil and water systems, support sustainable development, and promote technological and scientific advancements in these critical fields.
Organizer: The World Association of Soil and Water Conservation (WASWAC), Institut National de la Recherche Agronomique (INRA)
Theme and Topics: Resilient Landscapes: Innovations and Traditions in Climate-Adaptive Soil and Water Conservation (RISE-SWC)
Sub-themes:
1. Impact of climate change on soil erosion and coping strategies
2. The role of water resources management in addressing climate change
3. Challenges and opportunities of land use planning and management in the context of climate change
4. Integration of traditional wisdom and modern technology in soil and water management
5. Social and economic considerations in soil and water management
6. Strategic shifts in soil and water conservation practices and technologies to address climate change
7. Monitoring and early warning mechanisms in soil and water management
8. Soil and water conservation in production and construction projects
Important dates:
Abstract submission begin: January 1, 2025
Last date of abstract submission: May 30, 2025
Intimation of acceptance of abstracts: June 30, 2025
Registration fee payment begin: January 1, 2025
Contacts:
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DU Pengfei: waswac@foxmail.com
The Conference Secretariat:
Benabdelouahab Tarik: tarik.benabdelouahab@inra.ma
Conference updates:
www.waswac.org.cn and www.inra.org.ma

River Flow 2026---
The 13th International Conference on Fluvial Hydraulics (Greece, June 29-July 3, 2026)

Date: June 29-July 3, 2026
Venue: Thessaloniki, Greece
Summary: Since its inception in 2002, under the esteemed Fluvial Hydraulics Committee of the International Association for Hydro-Environment Engineering and Research (IAHR), the River Flow Conference Series has proudly stood as a premier global platform for the exchange of pioneering research and best practices in fluvial hydraulics and river engineering.
RiverFlow 2026 invites you to be part of a dynamic assembly of professionals, scholars, and industry practitioners in a vibrant forum dedicated to exploring the cutting-edge experimental, theoretical, and computational advances in river hydraulics and sediment transport processes, covering a wide range of themes spanning the areas of hydro-environment, geosciences and eco-bio-geomorphology.
Organizers: IAHR, Aristotle University of Thessaloniki, Division of Hydraulics and Environmental Engineering
Theme: Steering the future of hydro-environment research and practice

Topics:
1. Fundamental Flow Processes
2. Sediment Transport Dynamics and River Evolution Processes
3. Flow and Sediment Transport Through Hydraulic Structures
4. Eco-Hydraulics and River Re-naturalization
5. Pollutant Transport Processes
6. River Systems and Resilience Under a Changing Climate
7. Integrated River Basin Management
Contacts:
RiverFlow2026@civil.auth.gr
URL: https://riverflow2026.web.auth.gr/

The 9th International Conference on Estuaries and Coasts (China, December, 2026)

Date: December, 2026
Venue: Qinzhou, China
Organizers: Qinzhou Municipal People's Government, Department of Water Resources of Guangxi Zhuang Autonomous Region, Department of Transport of Guangxi Zhuang Autonomous Region
Sponsors: International Research and Training Center on Erosion and Sediment Research (IRTCES);
Co-sponsors: World Association for Erosion and Sediment Research (WASER), China Institute of Water Resources and Hydropower Research (IWHR); International Association for Hydro-Environment Engineering and Research (IAHR); Guangxi University; Guangxi Normal University; Beibu Gulf University, Pinglu Canal Group Co., Ltd
Summary: The International Conference on Estuaries and Coasts (ICEC) is a triennial event initiated by the International Research and Training Center on Erosion and Sedimentation (IRTCES). Eight such conferences have now been held in Hangzhou and Guangzhou, China; Sendai, Japan; Hanoi, Vietnam; Muscat, Oman, Caen, France, Shanghai, China and Canada in 2003, 2006, 2009, 2012, 2015, 2018, 2021 and 2024. With support from related international associations, and with the participation of experts and scholars worldwide, the ICEC has attracted wide attention and has become an important and popular event. The ICEC provides an opportunity for scientists, engineers, researchers and decision-makers to exchange ideas, research results and advanced techniques, and develop collaboration and friendships. The 9th International Conference on Estuaries and Coasts (ICEC 2026) will be held in Qinzhou, China during December, 2026. The ICEC 2026 will provide a venue for intellectual and enlightening discussions of ideas. The conference program will be broad with topics.
Theme:
Estuaries and Coasts under Modern Civilizations
Topics of the Conference:
1. Hydrodynamics and Sediment Transport in Estuaries and Coastal Zones: Fundamentals and Modeling
2. Monitoring, Early Warning and Forecasting of Estuarial and Coastal Hazards
3. Eco-environment Protection in Estuaries and Coastal Zones
4. Climate Change, Human Activities and Their Impacts on Estuaries and Coasts
5. Canal Constructions in Estuaries and Coastal Zones
6. Integrated and Intelligent Management of Estuaries and Coastal Zones
7. Morphological Evolutions of Estuaries, Coasts and Deltas
8. History, Culture, Socioeconomics and Policy on Estuaries and Coasts
9. Impacts of Watershed Developments on Estuaries and Coastal Zones

URL: https://ICEC2026.scimeeting.cn

The 11th International Symposium on Environmental Hydraulics (ISEH 2027) (USA, June 1-4, 2027)

Date: June 1-4, 2027
Venue: The University of Iowa, Iowa City, IA USA
Invitation: We are pleased to announce that the 11th International Symposium on Environmental Hydraulics (ISEH) will be held in Iowa City, IA, USA on the 1st – 4th June 2027. Sponsored by the International Association of Hydro-Environment Engineering and Research (IAHR), the 11th ISEH will build on the success of previous ISEH symposia in bringing together international experts to present and discuss new research and technical innovations in various areas of environmental fluid dynamics research.
The symposium will be held within the University of Iowa campus, providing an ideal setting in which to share knowledge and to meet old and new friends.
The symposium will focus on the latest advances in experimental and computational methods that can be used to deepen our understanding and capacity to predict flow and the associated fluid-driven ecological processes, anthropogenic influences (e.g., heat, dissolved and suspended organic/inorganic material), sediment transport and morphodynamic processes in rivers, coastal regions and reservoirs. We hope the ISEH symposium will provide a productive platform for fruitful scientific discussions, opportunities for younger scientists and practitioners to interact and exchange ideas with established researchers and spark new collaborations among participants. In particular, cross-fertilization among research groups, emergence of new concepts and approaches, and interdisciplinary interactions are expected to be highlights of the ISEH symposium.
We very much look forward to welcoming you in Iowa City. (Prof. George Constantinescu, Symposium Chair)

URL: https://iseh.conference.uiowa.edu/
Contact
ISEH Conference
College of Engineering
Iowa City, Iowa 52242
Email: iseh-2027@uiowa.edu
Phone: +01 319 594 2817

14th International SedNet Conference, 2025

Date: October 6–10, 2025
Venue: The University of Madrid, Madrid, Spain
Invitation: SedNet is the European network aimed at incorporating sediment issues and knowledge into European strategies to support the achievement of a good environmental status and to develop new tools for sediment management. Sediments fulfil fundamental functions as riverbeds, aquatic habitats, and play an integral role in the biogeochemical cycles of aquatic systems. Due to their quality and quantity, sediments have key functions for indispensable ecosystem services, including important human uses of water bodies. In line with the objectives of the European Water Framework Directive (WFD), Marine Strategy Framework Directive (MSFD), Mission Starfish 2030 (aiming to restore our oceans and waters), and the Green Deal (aiming for zero pollution), sediments must be healthy to help regenerate biodiversity, create good conditions for the provision of habitats and ecosystem services, and contribute to the good chemical and ecological status of water bodies. Water pollution causes sediments to function both as sinks and sources of pollutants. The remobilisation and transport of these polluted sediments can potentially negatively impact water quality and, consequently, the health of aquatic organisms. Additionally, activities such as mining and river regulation disrupt the natural sediment flow. To meet the objectives of European environmental policies, it is essential to achieve healthy sediments. We therefore need to define what constitutes healthy sediments and, thereafter, protect and, where needed, restore their health and balance. A strategy is needed to ensure the sustainable management and use of sediments. In summary, healthy sediments are key to supporting life, maintaining biodiversity, enriching soil, and sustaining ecosystems. But how can the health of sediments be defined? What indicators can be used for assessment? We are inviting abstracts for a series of sessions addressing various challenges and proposed solutions to the overall 2025 SedNet conference theme: “Healthy Sediments”.
Theme: Healthy Sediments.
6 thematic sessions:
1. Sediment Quality and Risk assessment
2. Sediment Flows
3. Nature Based Solutions and Beneficial Use
4. Sediment Literacy & Citizen Science
5. Data Collecting, Sharing and AI
6. Sediment Management Concepts and Policy

URL: https://sednet.org/events/sednet-conference-2025/
Contact:
Chayenne van Dijk
The SedNet Secretariat
Email: secretariat@sednet.org

unesco
Intergovernmental Hydrological Programme

International Sediment Initiative

unesco
International Research and Training Center on Erosion and Sedimentation

INTERNATIONAL SEDIMENT INITIATIVE (ISI)

Intergovernmental Hydrological Programme (IHP)
UNESCO

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

IRTCES: International Research and Training Center on Erosion and Sedimentation (IRTCES) under the auspices of UNESCO

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The ISI Newsletter is sent quarterly to members of the ISI Scientific Advisory Board and interested experts.

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