

INTERNATIONAL SEDIMENT INITIATIVE NEWSLETTER

Reporting ISI news to you quarterly

No. 67 June 28, 2023

IN THIS ISSUE

News

- ◇ UNESCO to establish a Category 1 Institute on Science, Technology, Engineering and Mathematics in China 1
- ◇ ISI discussion meeting on the Implementation Plan, Strategy and planning of the Advisory Board convened online 1
- ◇ Journal Impact Factor of the International Journal of Sediment Research increases to 3.6 2
- ◇ ISWCR received its latest JIF of 6.4 2
- ◇ MIT: River erosion can shape fish evolution, study suggests 3
- ◇ Ancient Ocean on Mars? Chinese rover finds marine sediments 4
- ◇ Across China: China's Sanjiangyuan bolsters biodiversity conservation efforts 5

Publications

- ◇ Papers Published in IJSR, Volume 38, No. 3, 2023 7
- ◇ Papers Published in IJSR, Volume 38, No. 4, 2023 8
- ◇ Contents of ISWCR (Vol. 11, No.2, 2023) 9

Coming Events

- ◇ The 40th IAHR World Congress (Austria, Aug. 21-25, 2023) 11
- ◇ World's Large Rivers Conference 2023 (Austria, Aug. 21-25, 2023) 11
- ◇ Call for Participants - 2023 International Workshops on Frontiers in Ecohydrology (Chongqing, China, Sept.4-23, 2023) 11
- ◇ The 15th International Symposium on River Sedimentation (Florence, Italy, Sept. 5-8, 2023) 12
- ◇ 9th FRIEND-Water Global conference (Senegal, Sept. 25-29, 2023) 12
- ◇ The 13th Symposium on River, Coastal, and Estuarine Morphodynamics (Urbana, USA, Sept. 25-28, 2023) 13
- ◇ The 1st IAHR and 4th CAE International Conference on Global Water Security and Sustainable Development 13

UNESCO “国际泥沙计划” 简报

本期内容

新闻

- ◇ 联合国教科文组织在中国成立 I 类科学技术中心 1
- ◇ 国际泥沙计划召开扩大会议讨论实施计划、改革指南和顾问委员会组成 1
- ◇ 《国际泥沙研究》期刊影响因子增至 3.6 2
- ◇ 《国际水土保持研究》最新影响因子 6.4 2
- ◇ 麻省理工学院：研究表明河流侵蚀能够塑造鱼类进化 3
- ◇ 火星上存在古代海洋？中国漫游车发现海洋沉积物 4
- ◇ 中国三江源加强生物多样性保护工作 5

出版物

- ◇ 《国际泥沙研究》2023 年第 38 卷第 3 期论文目录 7
- ◇ 《国际泥沙研究》2023 年第 38 卷第 4 期论文目录 8
- ◇ 《国际水土保持研究》2023 年第 11 卷第 2 期论文目录 9

会议/培训信息

- ◇ 第四十届 IAHR 大会（奥地利，2023 年 8 月 21-25 日） 11
- ◇ 世界大河会议 2023（奥地利，2023 年 8 月 21-25 日） 11
- ◇ 培训参加人征集-2023 年生态水文学前沿国际研讨会（中国重庆，2023 年 9 月 4-23 日） 11
- ◇ 第十五次河流泥沙国际学术讨论会（意大利佛罗伦萨，2022 年 9 月 6-9 日） 12
- ◇ 第九届 FRIEND 全球水资源讨论会（塞内加尔，2023 年 9 月 25-29 日） 12
- ◇ 第十三届河流、海岸和河口形态动力学研讨会（美国厄巴纳，2023 年 9 月 25-28 日） 13
- ◇ 第一届 IAHR 和第四届 CAE 全球水安全与可持续发展国际会议 13

NEWS

UNESCO to establish a Category 1 Institute on Science, Technology, Engineering and Mathematics in China



PARIS, May 22 (Xinhua) -- The United Nations Educational, Scientific and Cultural Organization (UNESCO) is set to establish a Category 1 Institute on science, technology, engineering, and mathematics (STEM) in Shanghai, China, according to a resolution adopted on Monday.

The 216th session of the UNESCO Executive Board said that establishing such an Institute will strengthen the organization's leadership in the field of STEM education. It will also contribute to the implementation of UNESCO's mission and the 2030 Agenda on sustainable development.

UNESCO's Category 1 Institutes build scientific capacity in member states.

The adopted resolution to establish a Category 1 Institute in China still needs to be approved by the upcoming 42nd session of UNESCO's General Conference in November. Once approved, it would be the first in China, as well as the first outside Europe.

(Source: Xinhua)

ISI discussion meeting on the Implementation Plan, Strategy and planning of the Advisory Board convened online

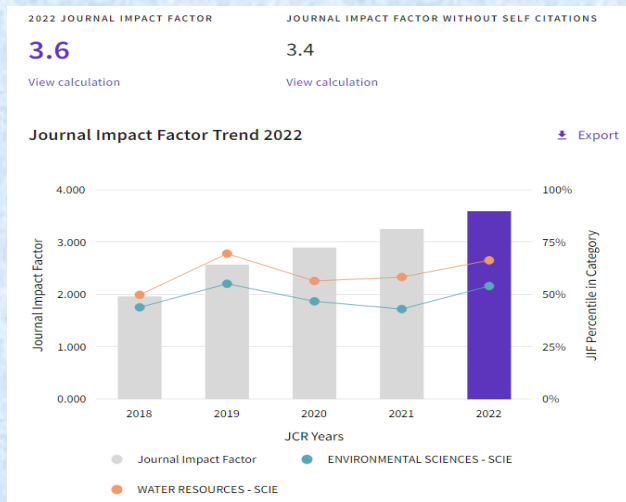


An ISI meeting on the Implementation Plan, Strategy and Planning of the Advisory Board was convened online on June 20, 2023. Participants included: Prof. Manfred Spreafico (ISI Advisory Group Chair), Prof. Des. Walling (ISI Advisory Group Member), Prof. Cheng Liu (ISI Advisory Group Member), Prof. Hongling Shi (ISI Technical Secretariat), Dr. Koen Verbist representing UNESCO-IHP Secretariat, Prof. Jianli Zhang from IRTCES, Dr. Stephan Dietrich and Ms. Luna Bharati from ICWRGC, Ms. Nguma Ruth Katui and Ms. Siying Tan from UNESCO-IHP Secretariat.

Three documents, the ISI Strategy contributing to IHP IX, the ISI implementation plan and the ISI Scientific Advisory Board structure and TORs, were discussed and new inputs were suggested.

In the meeting, after the ice-break introduction, Dr. Koen Verbist firstly introduced the new ISI overall Strategy, which followed the new Flagship Initiatives Framework under IHP-IX; then the Draft ISI implementation plan was fully discussed, and obtained a lot of good suggestions from other Initiative Flagships; finally, the ISI Scientific Advisory Board structure and TORs were elaborated and discussed.

Journal Impact Factor of the International Journal of Sediment Research increases to 3.6



The 2022 Journal Citation Reports (JCR) were released by Clarivate Analytics on June 28, 2023. The International Journal of Sediment Research (IJSR) Journal Impact Factor for 2022 is 3.6. Within the journals in the categories of Water Resources and Environmental Science, IJSR was ranked Q2 in both categories. The Journal Impact Factor (JIF) is a journal-level metric calculated from data indexed in the Web of Science Core Collection.

The IJSR is the official journal of the World Association for Sedimentation and Erosion Research (WASER). The journal is under the administration of the Ministry of Water Resources (MWR), PRC and is co-owned and sponsored by the International Research and Training Center on Erosion and Sedimentation (IRTCES), the China Institute of Water Resources and Hydropower Research (IWHR) and Tsinghua University. It is an international, peer reviewed journal, focusing on publication of original contributions related to theoretical advances, numerical modelling, field observational and laboratory studies and reviews dealing with processes, products and techniques in the field of sedimentation and erosion. Of particular importance are contributions covering topics linked to geography, geomorphology, soil erosion, watershed management, sediment transport, sedimentology, fluvial processes, fluvial geomorphology, reservoir sedimentation, coastal sedimentation and estuarine processes, sediment-related ecological and environmental problems, river management, and the social and economic effects of sedimentation.

All researchers in the sediment field are encouraged to submit their important papers to the International Journal of Sediment Research.

The Journal website can be found at : <https://www.journals.elsevier.com/international-journal-of-sediment-research>.

ISWCR received its latest Journal Impact Factor (JIF) of 6.4



Clarivate officially released the 2022 Journal Citation Reports (JCR) on June 28, 2023. For each SCIE indexed journal, the JCR presents a rich array of citation metrics, including the Journal Impact Factor (JIF), alongside descriptive data about a journal's open access content and contributing authors.

According to the latest JCR, the 2022 Impact Factor for the official journal of WASWAC - International Soil and Water Conservation Research (ISWCR) is 6.4.

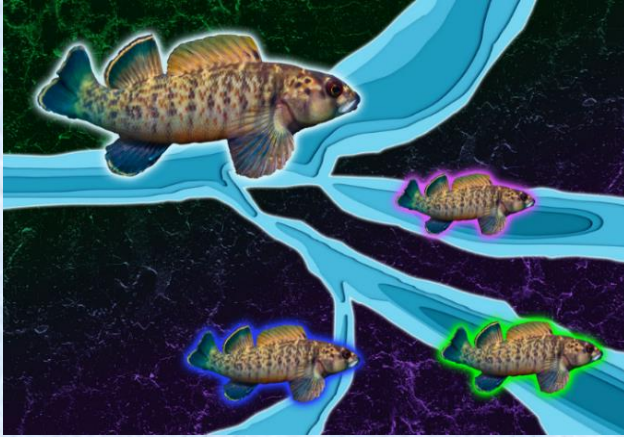
ISWCR was officially indexed by Science Citation Index Expanded in July, 2019, and is included in three subject areas, namely Water Resources, Soil Science, and Environmental Sciences. ISWCR received its first official Impact Factor (IF for 2019) of 3.770 in June 2020, the IF for 2020 and 2021 is 6.027 and 7.481, respectively. The impact factor of 6.4 this year is the fourth official IF for ISWCR.

Amongst the total of 103 journals in the Water Resources category, ISWCR was ranked 9. In the Soil Science and Environmental Science categories, it is ranked as 6 out of 37 (Q1) and 54 out of 274 (Q1), respectively. ISWCR is now a Q1 journal in the three categories of Water Resources, Soil Science, and Environmental Sciences.

MIT: River erosion can shape fish evolution, study suggests

The new findings could explain biodiversity hotspots in tectonically quiet regions.

Jennifer Chu | MIT News Office
Publication Date: May 25, 2023



If we could rewind the tape of species evolution around the world and play it forward over hundreds of millions of years to the present day, we would see biodiversity clustering around regions of tectonic turmoil. Tectonically active regions such as the Himalayan and Andean mountains are especially rich in flora and fauna due to their shifting landscapes, which act to divide and diversify species over time.

But biodiversity can also flourish in some geologically quieter regions, where tectonics hasn't shaken up the land for millennia. The Appalachian Mountains are a prime example: The range has not seen much tectonic activity in hundreds of millions of years, and yet the region is a notable hotspot of freshwater biodiversity.

Now, an MIT study identifies a geological process that may shape the diversity of species in tectonically inactive regions. In a paper appearing today in *Science*, the researchers report that river erosion can be a driver of biodiversity in these older, quieter environments.

They make their case in the southern Appalachians, and specifically the Tennessee River Basin, a region known for its huge diversity of freshwater fishes. The team found that as rivers eroded through different rock types in the region, the changing landscape pushed a species of fish known as the greenfin darter into different tributaries of the river network. Over time, these separated populations developed into their own distinct lineages.

The team speculates that erosion likely drove the greenfin darter to diversify. Although the separated populations appear outwardly similar, with the greenfin darter's characteristic green-

tinged fins, they differ substantially in their genetic makeup. For now, the separated populations are classified as one single species.

"Give this process of erosion more time, and I think these separate lineages will become different species," says Maya Stokes PhD '21, who carried out part of the work as a graduate student in MIT's Department of Earth, Atmospheric and Planetary Sciences (EAPS).

The greenfin darter may not be the only species to diversify as a consequence of river erosion. The researchers suspect that erosion may have driven many other species to diversify throughout the basin, and possibly other tectonically inactive regions around the world.

"If we can understand the geologic factors that contribute to biodiversity, we can do a better job of conserving it," says Taylor Perron, the Cecil and Ida Green Professor of Earth, Atmospheric, and Planetary Sciences at MIT.

The study's co-authors include collaborators at Yale University, Colorado State University, the University of Tennessee, the University of Massachusetts at Amherst, and the Tennessee Valley Authority (TVA). Stokes is currently an assistant professor at Florida State University.

Fish in trees

The new study grew out of Stokes' PhD work at MIT, where she and Perron were exploring connections between geomorphology (the study of how landscapes evolve) and biology. They came across work at Yale by Thomas Near, who studies lineages of North American freshwater fishes. Near uses DNA sequence data collected from freshwater fishes across various regions of North America to show how and when certain species evolved and diverged in relation to each other.

Near brought a curious observation to the team: a habitat distribution map of the greenfin darter showing that the fish was found in the Tennessee River Basin — but only in the southern half. What's more, Near had mitochondrial DNA sequence data showing that the fish's populations appeared to be different in their genetic makeup depending on the tributary in which they were found.

To investigate the reasons for this pattern, Stokes gathered greenfin darter tissue samples from Near's extensive collection at Yale, as well as from the field with help from TVA colleagues. She then analyzed DNA sequences from across the entire genome, and compared the genes of each individual fish to every other fish in the dataset. The team then created a phylogenetic tree of the greenfin darter, based on the genetic similarity between fish.

From this tree, they observed that fish within a tributary were more related to each other than to fish in other tributaries. What's more, fish within neighboring tributaries were more similar to each other than fish from more distant tributaries.

“Our question was, could there have been a geological mechanism that, over time, took this single species, and splintered it into different, genetically distinct groups?” Perron says.

A changing landscape

Stokes and Perron started to observe a “tight correlation” between greenfin darter habitats and the type of rock where they are found. In particular, much of the southern half of the Tennessee River Basin, where the species abounds, is made of metamorphic rock, whereas the northern half consists of sedimentary rock, where the fish are not found.

They also observed that the rivers running through metamorphic rock are steeper and more narrow, which generally creates more turbulence, a characteristic greenfin darters seem to prefer. The team wondered: Could the distribution of greenfin darter habitat have been shaped by a changing landscape of rock type, as rivers eroded into the land over time?

To check this idea, the researchers developed a model to simulate how a landscape evolves as rivers erode through various rock types. They fed the model information about the rock types in the Tennessee River Basin today, then ran the simulation back to see how the same region may have looked millions of years ago, when more metamorphic rock was exposed.

They then ran the model forward and observed how the exposure of metamorphic rock shrank over time. They took special note of where and when connections between tributaries crossed into non-metamorphic rock, blocking fish from passing between those tributaries. They drew up a simple timeline of these blocking events and compared this to the phylogenetic tree of diverging greenfin darters. The two were remarkably similar: The fish seemed to form separate lineages in the same order as when their respective tributaries became separated from the others.

“It means it's plausible that erosion through different rock layers caused isolation between different populations of the greenfin darter and caused lineages to diversify,” Stokes says.

“This study is highly compelling because it reveals a much more subtle but powerful mechanism for speciation in passive margins,” says Josh Roering, professor of Earth sciences at the University of Oregon, who was not involved in

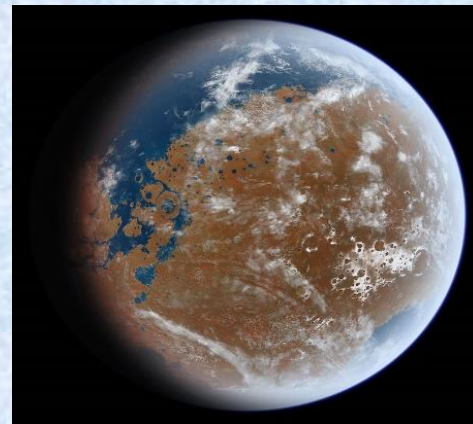
the study. “Stokes and Perron have revealed some of the intimate connections between aquatic species and geology that may be much more common than we realize.”

This research was supported, in part, by the mTerra Catalyst Fund and the U.S. National Science Foundation through the AGeS Geochronology Program and the Graduate Research Fellowship Program. While at MIT, Stokes received support through the Martin Fellowship for Sustainability and the Hugh Hampton Young Fellowship.

(Source: River erosion can shape fish evolution, study suggests | MIT News | Massachusetts Institute of Technology)

Ancient Ocean on Mars? Chinese rover finds marine sediments

Posted by Paul Scott Anderson <https://earthsky.org/wp-content/themes/earthsky-testing-6c8e0a978c578089f4b8b6-2/images/calendar.svg>
May 30, 2023



There has been growing evidence for an ancient ocean on Mars, in the northern hemisphere, as seen in this artist's illustration. Now, China's Zhurong rover has found what mission scientists say are marine sedimentary rocks. Image via Ittiz/Wikipedia (CC BY-SA 3.0).

We know that Mars had rivers and lakes in the distant past. But what about oceans? There is indeed tentative evidence for an ancient ocean in the northern hemisphere. However, scientists have been debating that evidence for decades. But now, researchers in China and the U.S. say they have found new clues in marine sedimentary rocks in Utopia Planitia that may prove the existence of that ocean. China's Zhurong rover discovered the sedimentary formations. The researchers announced the tantalizing findings in Science China Press on May 21, 2023.

Professor Long Xiao from the School of Earth Sciences at China University of Geosciences led

the research team. The team published its accepted peer-reviewed paper in *National Science Review* on May 18, 2023. The paper, still undergoing final editing, is available as a PDF. (<https://academic.oup.com/nsr/advance-article-pdf/doi/10.1093/nsr/nwad137/50285739/nwad137.pdf>)

New evidence for ancient ocean on Mars

China's Zhurong rover has been exploring its landing site on the southern edge of Utopia Planitia in the northern hemisphere of Mars. This is within the northern lowlands that some scientists say was likely once an ocean floor. The rover's newest findings now bolster that possibility. The rover has been studying the rocks in the area with its multispectral camera (MSCam), and the science team says that Zhurong has found marine sedimentary rocks. While most other data supporting the ocean hypothesis has come from orbiting spacecraft, this new data is in situ (on site).

Decades of research using remotely-sensed data have extracted evidence for the presence of an ocean in the northern lowlands of Mars in the Hesperian, but these claims have remained controversial due to the lack of in situ analysis of the associated geologic unit, the Vastitas Borealis Formation (VBF). The Tianwen-1/Zhurong rover was targeted to land within the VBF near its southern margin and has traversed almost 1.2 miles (2 km) southward toward the interpreted shoreline. We report here on the first in situ analysis of the VBF that reveals sedimentary structures and features in surface rocks that suggest that the VBF was deposited in a marine environment, providing direct support for the existence of an ancient (Hesperian) ocean on Mars.

Multispectral images provide clues

Zhurong has been gradually moving south toward what is thought to be an ancient coastline. The rover has taken 106 panoramic images so far during its travels. Mission scientists have been studying the multispectral images for clues about the rocks' composition and origin. They found bedding structures that are different from the usual volcanic rock deposits on Mars.

In addition, they were different from rock formations created by blowing sand.

More information: Yang Liu et al, Zhurong reveals recent aqueous activities in Utopia Planitia, Mars, *Science Advances* (2022). DOI: 10.1126/sciadv.abn8555

Journal information: *Science Advances*

Across China: China's Sanjiangyuan bolsters biodiversity conservation efforts

XINING -- Over the years, China has made consistent strides in enhancing its ability to protect the biodiversity of the Sanjiangyuan area in Northwest China's Qinghai province.



An aerial photo of Sanjiangyuan National Park in Northwest China's Qinghai province. [Photo / China Daily]

The Sanjiangyuan area, known as China's "water tower," contains the headwaters of the Yangtze, Yellow and Lancang rivers. Located at an average altitude of more than 4,700 meters, Sanjiangyuan National Park is the world's highest national park covering a total area of 190,700 sq km and boasts one of the highest concentrations of biodiversity in the world at high altitudes. Every year, tens of thousands of pregnant Tibetan antelopes start their migration to Hoh Xil in around May to give birth and leave with their offspring in late July.

During the 1980s and 1990s, due to poaching sprees, the population of Tibetan antelopes in Hoh Xil dropped to less than 20,000. Thanks to the country's active anti-poaching and biodiversity protection efforts in recent years, Hoh Xil is now home to more than 70,000 Tibetan antelopes. The status of Tibetan antelopes in China has been downgraded from "endangered" to "near threatened."

Since the establishment of the Longbao national nature reserve, located in the Sanjiangyuan area, in 1984, the number of bird species in the reserve has increased from 30 to 138.

According to Pasang Tsering, head of the management station of the reserve, the number of black-necked cranes, a species under first-class national protection, in the reserve rose from a few dozen to more than 200, and the bar-headed geese numbered over 10,000 at its peak.

This year, the reserve has been listed as a "wetland of international importance," and its ecosystem and biodiversity will undergo comprehensive and systematic protection, Pasang

Tsering added.

The Namse township of Qinghai's Yushu Tibetan autonomous prefecture, also located in the Sanjiangyuan area and through which the Lancang River flows, is known as the "hometown of snow leopards." This distinction stems from the frequent sightings of this highly protected species, which is under China's highest national-level protection.

More than 80 individual snow leopards have been recorded in Namse, where these creatures coexist with other wildlife, including lynx and white-lipped deer.

Tian Jian, chief engineer of the forestry and grassland bureau of Qinghai Province, said 85 percent of wildlife habitats in the province have been put under natural conservation management, and the population of rare and endangered wild animals has increased significantly.

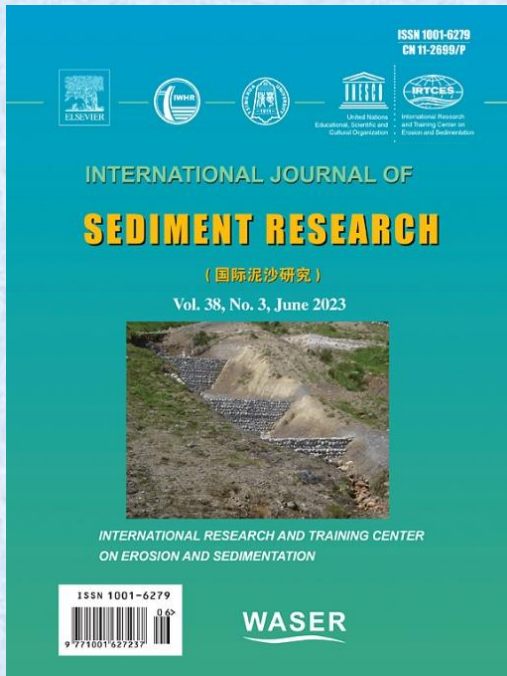
According to Zhang Yu, an official with the bureau, in the past decade, remarkable progress has also been made in the protection and research of rare and endangered wild plants in Qinghai.

By promoting the development of a natural reserve system with national parks as the main body, more than 75 percent of wild plants in the province have been effectively protected, helping to build a national gene bank for the genetic resources of wild organisms on the Qinghai-Tibet Plateau.

(Source: China Daily)

PUBLICATIONS

Papers Published in the International Journal of Sediment Research Volume 38, No. 3, 2023



Volume 38, No.3, 2023
Pages 303-480 (June 2023)

1. **Long-term experimental study on gravitational sedimentation of water aluminum oxide nanofluid at different volumetric concentrations**

Mario Misale, Johan Augusto Bocanegra, Annalisa Marchitto

2. **Composition, environment, and economic value of the Permian to Cretaceous coated grains from Zagros and the Persian Gulf**

Mehrangiz Naderi-Khujin, Vahid Tavakoli

3. **Modeling the effect of artificial flow and sediment flux on the environment and plankton of an estuary**

Yujun Yi, Yanning Gao, Xuefei Wu, Wenfei Jia, Qi Liu

4. **Alkaline phosphatase as a bio-indicator of phosphorus-eutrophy in freshwater ecosystems: A review**

Madhulika Singh, Jitendra Pandey

5. **Effect of sediment particles on the velocity profile of sediment–water mixtures in open-channel flow**

Lei Zhang, Jianzhao Guan, Deyu Zhong, Yousheng Wang

6. **Influence of cohesion on California bearing ratio of clay–gravel mixtures**

Rajesh Jain, Ketan Timani, Manish Pandey

7. **Effect of combining biogeotextile and vegetation cover on the protection of steep slope of highway in northern China: A runoff plot experiment**

Hongyuan Liu, Liang Liu, Keli Zhang, Ren Geng

8. **Assessment and prioritization of soil erosion triggering factors using analytical hierarchy process and Taguchi method**

Mehdi Hayatzadeh, Vahid Moosavi, Ramyar Aliramaee

9. **Experimental investigation and prediction of free fall jet scouring using machine learning models**

Farzin Salmasi, Parveen Sihag, John Abraham, Meysam Nouri

10. **Modelling of cantilever bank failure for peat-type meander bends in the source region of the Yellow River**

Hanyuan Yang, Zhiwei Li, Yongjun Lu, Huaixiang Liu, Liqin Zuo

11. **Scouring of a granular bed by dam break: Experimental study and numerical simulation by a VOF-LPT coupling**

Quyen Thi Le Nguyen, Viet Dung Nguyen, Patrice Coorevits

12. **Inhibitability of soil loss and sediment concentration during consecutive rainfalls from experimental plots treated by endemic microorganisms**

Seyed Hamidreza Sadeghi, Masumeh Ashgevar Heydari, Atefeh Jafarpour

13. **Assessment of the impacts of land-use change and slope position on soil loss by magnetic susceptibility-based models**

Saidati Bouhlassa, Naima Bouhsane

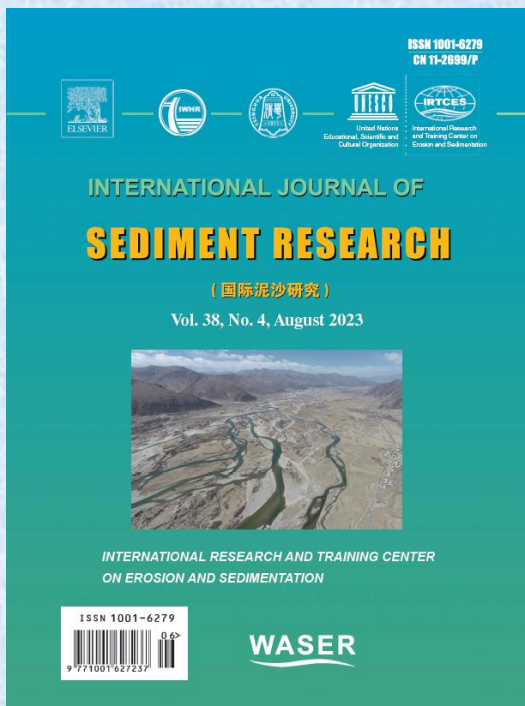
14. **Tracing sediment transport history using mineralogical fingerprinting in a river basin with dams utilizing sediment sluicing**

Kenichi Ito, Motohide Matsunaga, Tomoya Itakiyo, Hiroyuki Oishi, Kei Nukazawa, Mitsuteru Irie, Yoshihiro Suzuki

Full papers are available at ScienceDirect:

www.sciencedirect.com/journal/international-journal-of-sediment-research with free access to the paper abstracts.

Papers Published in the International Journal of Sediment Research Volume 38, No. 4, 2023



Volume 38, No.4, 2023
Pages 481-628 (August 2023)

1. **Spatio-temporal suspended sediment fingerprinting under different land management practices**

Maziar Mohammadi, Abdulvahed Khaledi Darvishan, Nader Bahramifar, Seyed Jalil Alavi

2. **Base flow separation for soil erosion simulation in a granitic forested headwater catchment using a process-based model, GeoWEPP**

Takuhei Yamasaki, Shoichiro Hamamoto, Taku Nishimura

3. **Impact of the Yellow River capture on the paleoenvironmental changes of Hongze Lake, China**

Hongwu Tang, Ming Gao, Saiyu Yuan, Huiming Zhang, ... Kun Zhang

4. **Pattern of spatial variability in granulometric and mineralogical characteristics across an ecologically sensitive sub-tropical wetland (Bihar, India)**

Alvia Aslam, Rajesh Kumar Ranjan, Avinash Dass

5. **Simulation of submerged granular flows by development of a two-phase incompressible explicit mesh-free method**

Tibing Xu, Shuangke Sun, Peng Wu

6. **Geographic distribution of arsenic contamination in the Himalayan Rivers flowing through Pakistan: Implications for its natural source and effects of anthropogenic activities**

Ishtiaque Hussain, Hafiz Ur. Rehman, Takaaki Itai, Junaid Ali Khattak, Abida Farooqi

7. **A new concept to forecast the process of suspended sediment accumulation in the bottom sediment of small reservoirs**

Maksymilian Cieśla, Renata Gruca-Rokosz, Lilianna Bartoszek

8. **Natural sediment at a dam and its inorganic materials as adsorbents of praseodymium (Pr(III))**

Melania Jiménez-Reyes, Jaime Jiménez-Becerril, Marcos Solache-Ríos, Perla Tatiana Almazán-Sánchez

9. **Provenance, depositional process, and tectonic setting of gold placer from the Bétaré-Oya Gold District (East-Cameroon, Central Africa) along the Precambrian Sanaga fault**

Milan Stafford Tchouatcha, Arnaud Patrice Kouske, Primus Azinwi Tamfuh, Epimarc Gildas Tchameni Ngouabe, Gerald Chuye Yango

10. **Numerical modeling of local scour of non-uniform graded sediment for two arrangements of pile groups**

Saeid Okhravi, Saeed Gohari, Mahdi Alemi, Rodrigo Maia

11. **Exploring the potential of artificial intelligence techniques in prediction of the removal efficiency of vortex tube silt ejector**

Sanjeev Kumar, Chandra Shekhar Prasad Ojha, Nand Kumar Tiwari, Subodh Ranjan

Full papers are available at ScienceDirect:

[www.sciencedirect.com/journal/international-](http://www.sciencedirect.com/journal/international-journal-of-sediment-research)

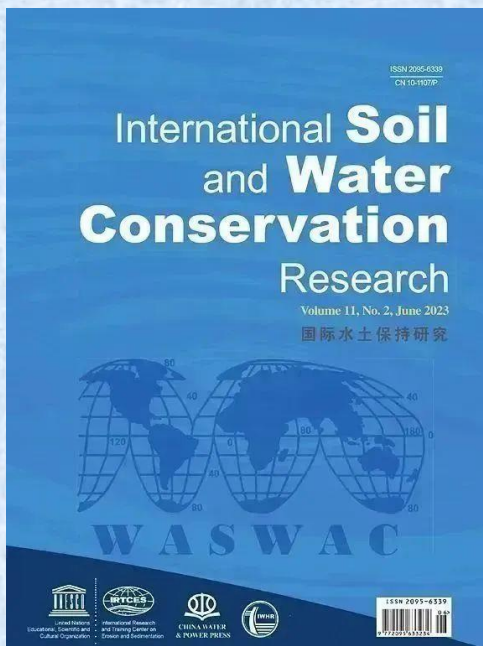
[journal-of-sediment-research](http://www.sciencedirect.com/journal/international-journal-of-sediment-research) with free access to the paper abstracts.

Contents of ISWCR (Vol. 11, No.2, 2023)

The International Soil and Water Conservation Research (ISWCR), the official journal of the World Association of Soil and Water Conservation (WASWAC), <http://www.waswac.org>, is a multidisciplinary journal for soil and water conservation research, practice, policy, and perspectives. This journal aims to disseminate new knowledge and promote the practice of soil and water conservation.

The journal was indexed by the Science Citation Index Expanded (SCIE) in July 2019. The latest official impact factor, released by Clarivate Analytics in June 2023, is 6.4 and ISWCR is now a Q1 journal in all three categories of Water Resources, Soil Science, and Environmental Sciences. It is ranked as 9 out of 103 in Water Resources, 6 out of 37 in Soil Science, and 54 out of 274 in Environmental Sciences, respectively.

The latest issue of ISWCR (Volume 11, Issue 2) is recently released. The full article is downloadable by clicking the titles.



Volume 11, Issue 2
Pages 225-414 (June 2023)

Global mapping of volumetric water retention at 100, 330 and 15 000 cm suction using the WoSIS database

Maria Eliza Turek, Laura Poggio, Niels H. Batjes, Robson André Armindo, Quirijn de Jong van Lier, Luis de Sousa, Gerard B.M. Heuvelink

Pages 225-239

Evaluating the applicability of the water erosion prediction project (WEPP) model to runoff and soil loss of sandstone reliefs in the Loess Plateau, China

Ruipeng Zhu, Yang Yu, Jiongchang Zhao, Dianjun Liu, Siyu Cai, Juanlong Feng, Jesús Rodrigo-Comino

Pages 240-250

Response of erosion reduction effect of typical soil and water conservation measures in cropland to rainfall and slope gradient changes and their applicable range in the Chinese Mollisols Region, Northeast China

Qin Zhang, Wei Qin, Wenhong Cao, Jian Jiao, Zhe Yin, Haichao Xu

Pages 251-262

Effects of soil rock fragment content on the USLE-K factor estimating and its influencing factors

Miaomiao Yang, Qinke Yang, Keli Zhang, Chunmei Wang, Guowei Pang, Yuru Li

Pages 263-275

Brazilian payment for environmental services programs emphasize water-related services

Ingrid Mamedes, Angélica Guerra, Dulce B.B. Rodrigues, Letícia Couto Garcia, Raquel de Faria Godoi, Paulo Tarso S. Oliveira

Pages 276-289

An improved method that incorporates the estimated runoff for peak discharge prediction on the Chinese Loess Plateau

Wenhai Shi, Miaomiao Wang, Donghao Li, Xianwei Li, Mengying Sun

Pages 290-300

Experimental determination of sediment transport capacity of rill flow over sandified loess slope

Ren Feng, Jiacun Chen, Zhenyue Xie, Dingqiang Li, Zaijian Yuan

Pages 301-310

Spatial variability of soil organic carbon stock in an olive orchard at catchment scale in Southern Spain

Jose A. Gómez, Gema Guzmán, Tom Vanwalleghem, Karl Vanderlinden

Pages 311-326

Determining nitrogen fate by hydrological pathways and impact on carbonate weathering in an agricultural karst watershed

Zhuo Hao, Yang Gao, Yang Yang, Qingwen Zhang
Pages 327-338

Effects of cropland abandonment and afforestation on soil redistribution in a small Mediterranean mountain catchment

Makki Khorchani, Leticia Gaspar, Estela Nadal-Romero, Jose Arnaez, Teodoro Lasanta, Ana Navas
Pages 339-352

Assessing non-point source pollution in an apple-dominant basin and associated best fertilizer management based on SWAT modeling

Yiwen Han, Zhong Liu, Yafei Chen, Yingxuan Li, Haipeng Liu, Lianghong Song, Yong Chen
Pages 353-364

Kinetics of native and added carbon mineralization on incubating at different soil and moisture conditions in Typic Ustochrepts and Typic Halustalf

Harjinder Kaur, Raghava R. Kommalapati, Gurbachan S. Saroa
Pages 365-381

Influence of mulch and poultry manure application on soil temperature, evapotranspiration and water use efficiency of dry season cultivated okra

Mutiu Abolanle Busari, Ganiyu Olawale Bankole, Idris Adebajo Adiamo, Rasaq Olayiwola Abiodun, Olanrewaju Hammed Ologunde
Pages 382-392

The effect of tea plantation age on soil water-stable aggregates and aggregate-associated carbohydrate in southwestern China

Shuqin He, Renhuan Zhu, Zicheng Zheng, Tingxuan Li
Pages 393-401

Hydrological and sediment connectivity under freeze – thaw meltwater compound erosion conditions on a loessal slope

Tian Wang, Jingsi Li, Jingming Hou, Yongyong Ma, Peng Li, Yu Tong, Jing Li, Zhanbin Li
Pages 402-411

New sciences & technologies in soil conservation and eco-sustainability

Paolo Tarolli, Manuel Esteban Lucas-Borja, Guoqiang Yu, Xiangzhou Xu
Pages 412-414

More about ISWCR at ScienceDirect : <https://www.sciencedirect.com/journal/international-soil-and-water-conservation-research>.

COMING EVENTS

The 40th IAHR World Congress (Austria, Aug. 21-25, 2023)

Date: August 21-25, 2023

Venue: Vienna, Austria

Invitation from Prof. Joseph Hun-wei Lee, IAHR President: On behalf of the International Association for Hydro-environment Engineering and Research (IAHR), I am delighted to invite you to participate in the 40th IAHR World Congress to be held in Vienna, Austria, from August 21st to 25th, 2023. For more than seventy-five years, the biennial IAHR World Congresses have brought together leading experts to help address the world's pressing water environment engineering challenges. The event has traditionally provided researchers and decision makers the opportunity to share recent advances and experiences, identify emerging technology trends, and engage in lively debates that have positively impacted our world.

Following the last IAHR Congress held in 2021 in Granada, Spain under the theme "From Snow to Sea", the main theme of the 40th IAHR World Congress will be "Rivers – Connecting Mountains and Coasts" focusing attention on the importance of considering the integral water cycle to address present and future challenges.

Since its creation in 1935, IAHR is known as a leading international organization of engineers and professionals in fields related to the water environment. IAHR stimulates and promotes research and its application – by sharing new research paradigms and networks, setting industry standards, informing best water management practices, and nurturing young professionals. Through its powerful knowledge products and networks, IAHR makes important contributions to sustainable development in many ways.

At the upcoming Congress, IAHR will unleash its new Strategic Plan and present exciting knowledge platforms and prominent speakers on global water environment issues including climate-induced changes to water resources, adaptive management, artificial intelligence (AI) and smart water management, Eco hydraulics, and policy forums. I, therefore, welcome you to join us and share with us your work. I look forward to welcoming you to Vienna in August 2023!

URL: <https://rivers.boku.ac.at/iahr/>

Vienna Water Conferences 2023:
<https://rivers.boku.ac.at>

World's Large Rivers Conference 2023 (Austria, Aug. 21-25, 2023)

Date: August 21-25, 2023

Venue: Vienna, Austria

Invitation: This conference aims to provide a global forum for a wide-ranging discussion of key issues related to research on large rivers and their effective and sustainable management, involving both scientists and decision-makers. We kindly ask all interested authors to submit their work on the topics of Hydrology, Hydraulics & Hydroclimatic Impacts Sediment Transport & River Morphology River Pollution, Ecology & Restoration Integrated River Management. This time, a special focus will be on Rivers in a Changing World. The goal is to establish a scientific knowledge base and develop scientific reports on the status of large rivers for a better understanding of developments, synergies, and challenges in large river basins. So far, three status reports on large rivers have been developed (Danube, Mekong, and Niger) and up to 300 rivers should follow. Furthermore, the structure of the World's Large Rivers Initiative will be discussed at the World's Large Rivers conference in Vienna 2023.

Special information: In honor and celebration of the 5th anniversary of the World's Large Rivers Conference, the 40th anniversary of the IAHR World Congress and the 30th anniversary of the Danube Conference, all three conferences will be held simultaneously in Vienna under the motto "Vienna Water Conferences 2023"! You can purchase a special combined ticket to attend all three outstanding events!

URL: <https://worldslargerivers.boku.ac.at>

Vienna Water Conferences 2023:
<https://rivers.boku.ac.at>

Call for Participants - 2023 International Workshops on Frontiers in Ecohydrology

Under the support of UNESCO-IHP Ecohydrology program, and the auspices of the Chinese Academy of Sciences, Chongqing Institute of Green and Intelligent Technology are organizing the UNESCO and the Chinese Academy of Sciences 2023 International Workshops on Frontiers in Ecohydrology, which will take place in in Chongqing, China, 4-23 September 2023.

The organizers are calling for about 20 participants, mainly from developing countries. All the participants to the workshop are funded by the

Chinese Academy of Sciences with international flights and accommodations. The organizers are looking forward to participants from different countries, not only limited to Asian and African countries, but also from other parts of the world.

In addition, an international symposium will be held as a side event of the workshop organized by UNESCO-IHP Ecohydrology program. UNESCO Beijing Office and other three organizations will be the co-organizer of the international workshop.

Enclosed please find the workshop brochure and application form, and sharing this to your networks and colleagues are welcomed.

For further information, please contact: ecohydro@cigit.ac.cn; ecohydro2023@126.com; Lizhe@cigit.ac.cn

(<http://isi.irtces.org/isi/NewsEvents/news/webinfo/2023/04/1681048875246708.htm>)

The 15th International Symposium on River Sedimentation (Florence, Italy, Sept. 5-8, 2023)

Date: September 5-8, 2023

Venue: Florence, Italy

Organizer: University of Florence and University of Padua

Sponsors: International Research and Training Center on Erosion and Sedimentation (IRTCES); World Association for Erosion and Sediment Research (WASER)

Co-sponsors: International Association for Hydro-Environment Engineering and Research (IAHR).

Secretariat: University of Florence, Italy
Permanent Secretariat: IRTCES

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 relating to the study of sediment and its management.

Symposium Theme and Topics:

The theme of the symposium is

Sustainable Sediment Management in a changing Environment

The symposium topics include:

1. Sediment and pollutant transport

2. Morphodynamics
3. Ecohydraulics
4. Sediment related disaster and climate change
5. Reservoir sedimentation, Interactions between sediment and hydraulic structures
6. Sustainable Sediment Management at the river-costal basin scale
7. Social, economic & political issues related to sediment and water management

URL: <https://www.isrs2022.it/>

Organization & Contacts:

Organized by Department of Civil and Environmental Engineering, University of Florence, Italy

Luca Solari, Chair, Department of Civil and Environmental Engineering, University of Florence

Organizing Committee Co-Chairs:

Stefano Lanzoni, Co-Chairs, Department of Civil, Environmental and Architectural Engineering, University of Padova

Contacts:

Costanza Carbonari, Department of Civil and Environmental Engineering, University of Florence, info@isrs2022.it

9th FRIEND-Water Global conference (Senegal, Sept. 25-29, 2023)

Date: September 25-29, 2023

Venue: Cheikh Anta Diop University, Dakar, Senegal

Background: FRIEND-Water (Flow Regime from International Experimental and Network Data) is an international collaborative network of experts of the UNESCO Intergovernmental Hydrological Programme (IHP). Established in 1985, it aims to generate new understanding about regional hydrology and multi-scale water cycle processes. FRIEND-Water is investigating long-term variations and changes in hydrological regimes to better understand the climate and river basin controls, as well as influence of humans on the spatial and temporal distribution of water. As a flagship initiative of IHP IX (2022-2029) FRIEND-Water aims to put science to action for a Water Secure World.

FRIEND-Water research is critical for: water resources management, socio-economic development, secure livelihoods, safeguard the environment, and assessing the impact of global change. The FRIEND-Water initiative is currently structured in 8 regional groups: West and Central Africa, Europe, Mediterranean, Latin America and Caribbean, Southern Africa, Asia Pacific, Nile, Congo. The FRIEND-Water programme complements and interacts with many national and

international projects and initiatives: Ecohydrology-IHP, International Sediment Initiative (ISI), the International Drought Initiative (IDI), the International Floods Initiative (IFI), the Global Network on Water and Development Information for Arid Lands (GWADI), the WMO/GWP Integrated Drought Management Programme (IDMP), World's Large Rivers Initiative (WLRI), among others. The Global FRIEND conference takes place every 4 years with previous editions in Norway, Germany, Slovenia, South Africa, Cuba, Morocco, France and China.

Abstract submission form:

<https://forms.gle/oDZHMYguZjWVAbVM6>

Contacts:

ORGANIZING COMMITTEE

friendwater2023@gmail.com

WEBSITE

<https://en.unesco-montpellier.org/friend-water-program>

The 13th Symposium on River, Coastal, and Estuarine Morphodynamics (Urbana, USA, September 25-28, 2023)

Date: September 25-28, 2023

Venue: Urbana-Champaign, USA

Summary: The first RCEM Symposium was held in Genova, Italy, in 1999. Since then, the RCEM community has come together every two years to mark the progress in the field of morphodynamics. After going virtual in 2021, RCEM2023 will be the second time the Symposium is held in USA.

RCEM 2023 will be held at the University of Illinois at Urbana-Champaign. UIUC is the flagship campus of the University of Illinois System.

UIUC counts with 15 Colleges and Instructional Units. It hosts an Undergraduate student population of near 34K domestic students and, 5k international students, with a Graduate student population of near 16K students.

RCEM at UIUC will count with the support of faculty and students from multiple departments, from Civil & Environmental Engineering, Geography & Geographic Information Science, Geology, Atmospheric Sciences, Mechanical Science & Engineering and partner institutions located in Urbana-Champaign.

The Conference will take place at the Illini Union, our iconic I-shaped building which has been a resource to the entire campus community since its opening in 1941.

Deadline for abstract submission is extended to April 15th, 2023.

Abstracts should be a single page.

URL: <https://rcem.cee.illinois.edu/>

Contacts:E-mail: tinoco@illinois.edu

The 1st IAHR and 4th CAE International Conference on Global Water Security and Sustainable Development

Date: October 30-November 3, 2023

Venue: Nanjing, China

Summary: The 1st IAHR and 4th CAE International Conference on Global Water Security and Sustainable Development will be held by the Yangtze Institute for Conservation and Development, Hohai University and Nanjing Hydraulic Research Institute in Nanjing (China) from October 30th to November 3rd, 2023. The successful development of global water security faces significant challenges. These challenges require close cooperation between scientists, engineers, water resources managers and policy makers. In this regard, the conference will provide a forum bringing together participants from academia, consulting firms, local, provincial and national government agencies, and offering them an opportunity to interact in an informal and relaxed environment. The conference will also provide students with an opportunity to discuss their interests with renowned and well-established researchers and professionals in this field.

Themes:

1. Hydro-environmental Modelling and Assessment:
2. Hydro-biological Processes:
3. Hydro-morphological Processes:
4. Groundwater Transport Processes:
5. Groundwater Transport Processes:
6. Nature-Based Solutions:
7. Disaster Risk Reduction and Resilience:
8. Climate Change and Population Growth Impacts:
9. Digital Water Transformation:
10. Data Technologies:
11. Design of Storage Facilities, Coastal Basins and Desalination Plants:
12. Agricultural and Aquaculture Developments:
13. Water-Food-Energy Nexus:
14. Water Transfer and Governance:
15. Externalities of Engineering:

URL:

<https://icgws2023.iahr.org/en/web/index/266>

Organization & Contacts:

Yangtze Institute for Conservation and Development

Hohai University

Nanjing Hydraulic Research Institute

Contacts

Email: gws2023@yicode.org



unesco

Intergovernmental
Hydrological Programme



INTERNATIONAL SEDIMENT INITIATIVE (ISI)
Intergovernmental Hydrological Programme (IHP)
UNESCO

ORGANISATION: UNESCO

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

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

ISI GOVERNANCE

Advisory Group

Manfred Spreafico (Chairperson)	Switzerland
Cheng Liu	China
Koen Verbist	UNESCO
Desmond E. Walling	UK

Expert Group

Abdalla Abdelsalam Ahmed	Sudan
Farhad Yazdandoost	Iran
Gerrit Basson	South Africa
Giampaolo Di Silvio	Italy
Gil Mahé	France
Helmut Habersack	Austria
Johannes Cullman	WMO
Rollin H. Hotchkiss	USA
Valentin Golosov	Russia
Zhao-Yin Wang	China
José Alberto Zúñiga	Costa Rica
Thomas Hoffmann	Germany

ISI TECHNICAL SECRETARIAT

International Research and Training Center on
Erosion and Sedimentation (IRTCS)
under the auspices of UNESCO
P.O. Box 366, 20 Chegongzhuang West Rd.
Beijing, 100048, China
Fax: +86-10-68411174
<http://www.irtces.org/>

Secretary-General:

Liu, Cheng	China
------------	-------

Contact

Shi, Hongling	China
Zhao, Ying	China

=====

Newsletter Layout and Production:

ISI Technical Secretariat
The ISI Newsletter is sent quarterly to ISI
Governance members and interested experts.
Please send your contributions to the ISI
Chairperson at manfred.spreafico@gmail.com or
ISI technical Secretariat at shihl@iwhr.com

=====

Editor: Prof. Shi Hongling
P.O. Box 366, 20 Chegongzhuang West Rd.
Beijing, 100048, China
Fax: +86-10-68411174
E-mail: shihl@iwhr.com
Advisor: Prof. Des. E. Walling

=====