WASER
WORLD ASSOCIATION FOR SEDIMENTATION AND EROSION RESEARCH

World Association for Sedimentation & Erosion Research – WASER

NEWSLETTER

Reporting WASER news to you regularly

2020 No. 2
(June. 26, 2020)

IN THIS ISSUE

世界泥沙研究学会简报

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President's letter to members regarding the COVID-19 Pandemic

To: Members of WASER

April 22, 2020

Dear colleagues and friends,

The COVID-19 pandemic is an unprecedented challenge to the entire human race. The World Association for Sedimentation and Erosion Research (WASER) is an independent international organization that is non-profit, non-political, non-governmental, and free of any racial, ethnic or gender prejudices. WASER fully supports WHO's commitment to public health, science, and to serving all the people of the world without fear or favour. Working together in solidarity without any discrimination based on race, nationality or ideology is the only way to win this fight against the coronavirus. As the president of WASER, I invite you to join our voices to combat all forms of rumour, discrimination, and xenophobia related to the pandemic.

The COVID-19 pandemic is inflicting major disturbance on all aspects of our lives. On behalf of the Association's Officers and Council, I wish you and your loved ones good health and I hope that you will stay safe and protected. The Association will continue its services to the members through email, newsletters, and the WASER website (http://www.waser.cn/). I am pleased to inform you that the organization of the 15th International Symposium on River Sedimentation (15th ISRS) to be held in Florence in 2022 is proceeding as planned, and that three issues of the International Journal of Sediment Research have already been published this year despite the pandemic.

At this critical time, I call on all members to follow the guidelines and advice given by the WHO on how to control the COVID-19 pandemic, to support the measures to contain the virus put forward by the country in which they live, and to provide all possible help and support to their country and the world in our fight against the coronavirus.

I hope everyone is keeping well and doing what is needed to keep themselves and their family safe!

Sincerely yours,

Zhaoyin Wang

President of WASER

NEWS

President Xi Focus: China reaffirms its commitment to green development

BEIJING, May 13, 2020 (Xinhua) -- While checking the ecological protection work undertaken on the Fenhe River in Taiyuan, Shanxi Province, during his recent inspection tour, President Xi Jinping expressed his satisfaction with the tremendous changes made to the ecological environment along the river and stressed the importance of green development.

As the second-largest tributary of the Yellow River, the Fenhe River, which has a length of 716 km, passes through six cities and dozens of counties before joining the Yellow River. The Fenhe River has nine tributaries in the city of Taiyuan, the provincial capital. However, for historical reasons, the river, also known as the "mother river" of Shanxi, used to be highly polluted.

This is not the first time that Xi, also General Secretary of the Communist Party of China Central Committee and Chairman of the Central Military Commission, voiced his concern over the environment along the Fenhe River. Back in June 2017, during an inspection tour in Shanxi, he emphasized the need to increase the amount of water in the Fenhe River, improve its water quality and beautify the landscape.

As a result, Taiyuan launched a comprehensive treatment project for the nine rivers and completed it in 2018. With over 20 kinds of plants being used to support ecological improvements, greenbelts emerged on the banks of the nine rivers.

Underscoring the integration of environmental protection, the energy revolution, green development, and economic transformation, Xi noted that the restoration of the Fenhe River is not only essential for environmental protection and the economic development of Shanxi, but also important to the historical and cultural inheritance of the province.

FOLLOWING A GREEN PATH

With the domestic COVID-19 epidemic waning and China powering ahead in returning to work and resuming business and production, Xi's remarks reaffirmed the country's determination to follow a green development path and implement the national strategy for high-quality development.

It has been a tough but firm choice for China, especially at a time when the world's second-largest economy is struggling to cope with the unprecedented economic challenge brought by the epidemic. But the country stands steadfast in resisting the old way of developing the economy at the cost of the environment.

Xi has always attached great importance to the protection and improvement of the country's water system as well as the balance between economic development and ecological protection.

Visiting the wetland of Dianchi Lake in Kunming, capital of southwest China's Yunnan Province, in January, for instance, Xi placed similar emphasis on ecological civilization and green development. Once among the most polluted lakes in China, the Dianchi Lake has seen its ecology greatly improve after many years of conservation efforts.

China has stepped up rolling out measures to enhance environmental protection and pursue high-quality development.

In April 2020, the Ministry of Water Resources and the Ministry of Finance announced the first batch of 55 pilot counties for work to improve water system connectivity and comprehensive improvement of rural water systems, with the central government allocating 2.5 billion yuan (about 353 million U.S. dollars) to these counties to fight rural water pollution.

Meanwhile, the Ministry of Ecology and Environment released a plan urging local governments to actively resume 114 major ecological projects, which covered water treatment, ecological restoration, and industrial park construction and were selected to boost investment, promote economic growth, and meet the people's demands.

GREEN OUTCOMES

The path of green development is vital to the country's economy and people's wellbeing.

Provinces such as Shanxi have been rewarded by the improved environment as the ecological protection work is taking effect.

Vigorously promoting a greener economy, Shanxi, the coal-rich province cut 27.45 million tonnes of coal production capacity and saw a GDP growth higher than the country's average level in 2019.

Last year, the province planted about 347,333 hectares of trees, and the groundwater level continued to rise in the Fenhe River valley.

Apart from supporting major environmental projects, China also introduced an environmental economic policy to steer businesses toward sustainable growth, unveiling a plan in December 2019 to establish a national green development fund in 2020.

The country's green finance, an emerging environmental economic policy tool, has seen rapid expansion in recent years. In 2019, its green bond issuance topped 30 billion U.S. dollars, ranking second in the world, data from Bloomberg showed.

Behind the firm commitment to green development is the top leadership's pursuit of achieving a moderately prosperous society in all respects and the foresight of maintaining a strategic focus on improving the ecological environment in the long run.

More should be done to accelerate institutional innovation and strengthen the implementation of the institutional system to guide the formation of a green mode in production and living, Xi has stressed. (Source: Xinhua News)

Editor's Choice - Uniform and graded bed-load sediment transport in a degrading channel with non-equilibrium conditions (IJSR)

We would like to highlight the following paper published in the International Journal of Sediment Research:

Uniform and graded bed-load sediment transport in a degrading channel with non-equilibrium conditions, by Khabat Khosravi, Amir H.N. Chegini, James R. Cooper, Prasad Daggupati, Andrew Binns, Luca Mao, DOI: 10.1016/j.ijsrc.2019.10.005, Volume 35, Issue 2, Pages 115-124.

Abstract: Bed-load transport plays a critical role in river morphological change and has an important impact on river ecology. Although there is good understanding of the role of the variation of river bed grain size on transport dynamics in equilibrium conditions, much less is understood for non-equilibrium conditions when the channel is either aggrading or degrading. In particular, the relative role of different grain sizes in the promotion and hindering of the transport of coarse and fine fractions in a degrading channel has yet to be investigated. The current study attempts to provide new understanding through a series of flume experiments done using uniform and graded sediment particles. The experiments revealed coarser grain-size fractions for a poorly-sorted sediment, relative to uniform-sized sediment, reduced the transport of finer grains and finer fractions enhanced the transport of coarse grains. This hindering-promotion effect, caused by relative hiding and exposure of finer and coarse fractions, increased with bed slope and decreased with relative submergence. In particular, as relative submergence increased, the graded fractions tended towards behaving more like their uniform-sized counterparts. Also, the bed-load parameter of the graded fractions increased more with a rise in bed slope than observed for the uniform-sized counterparts. These results revealed, for degrading channel conditions, such as downstream of a dam, bed-load equations developed for uniform bed sediment are inappropriate for use in natural river systems, particularly in mountain streams. Furthermore, changes in river bed composition due to activities that enhance the input of hill-slope sediment, such as fire, logging, and agricultural development, are likely to cause significant changes in river morphology. (Hongwei Fang, Editor-in-Chief, International Journal of Sediment Research)

Editor's Choice - Modeling the effect of sediment concentration on the flow-like behavior of natural debris flow

We would also like to highlight the following paper published in the International Journal of Sediment Research:

Modeling the effect of sediment concentration on the flow-like behavior of natural debris flow, International Journal of Sediment Research, by Leonardo Schippa, DOI: 10.1016/j.ijsrc.2020.03.001. Volume 35, Issue 4, Pages 315-327

Abstract: The rheological behavior of natural slurries consisting of fine-grained, reconstituted debris-flow deposits on pyroclastic terrains having different solid concentrations (ranging from 30 to 42%) has been investigated using a rotational rheometer equipped with a vane rotor system. Experiments were done by increasing the applied shear stress step by step; then a decreasing stress ramp was applied following the same shear stress levels. The slurry mixtures exhibit a typical yield-stress fluid behavior with a static yield stress larger than the dynamic yield stress. In the range of the

shear rate corresponding to the flow-like behavior the slurry mixtures behave as a dilatant fluid at lower grain concentrations and as a pseudoplastic fluid in correspondence with the higher grain content, showing a strong discrepancy from the Bingham idealization. The rheological behavior is better interpreted by a Herschel-Bulkley model, whose rheological parameters strongly depend on the granular concentration. Therefore, a generalized Herschel-Bulkley model accounting for the bulk sediment concentration effect is proposed. (Hongwei Fang, Editor-in-Chief, International Journal of Sediment Research)

Recent Research: Plant root hairs are key to reducing soil erosion

The tiny hairs found on plant roots play a pivotal role in helping reduce soil erosion, a new study has found. The research, led by the University of Bristol and published in Communications Biology, provides compelling evidence that when root hairs interact with the surrounding soil they reduce soil erosion and increase soil cohesion by binding soil particles.

Soil erosion can have a devastating impact across the globe and a serious threat for modern agriculture. The increased demand for agriculture has led to forests and natural grasslands being converted to farm fields and pastures.

However, many of the plants grown, such as coffee, cotton, and palm oil, can significantly increase soil erosion beyond the soil's ability to maintain and renovate. It can also lead to increased pollution and sedimentation in streams and rivers or, because these areas are often less able to hold onto water, can worsen flooding. This problem is particularly urgent considering the ever-expanding human population and climate change.

Researchers from the Universities of Bristol and Exeter have revealed the crucial function the microscopic roots hairs play in binding and reinforcing soil.

While the larger-scale root properties such as diameter, length and surface area have been extensively studied to understand their role in preventing soil erosion, the effect that micro-scale properties, such as root hairs, has been less well documented.

The research team found that, when planted in sufficient density, plants with root hairs reduced soil loss almost completely – while otherwise identical plants without hairs did not reduce erosion.

Three methods were used to explore the soil retention benefits of root hairs. First, the samples were placed in a sterile gel, in a petri dish, and then subjected to increasing centrifugal force. The study found that the hairless seedlings were easier to remove from the gel compared to seedlings abundant with root hairs.

Second, the study found that root hairs were also shown to stabilise the plant in the soil, as they increased the force needed to uproot the plant.

Third, in the experimental landscapes laboratory at Exeter, root hairs reduced water erosion to almost zero.

Professor Claire Grierson, one of the study's lead authors from Bristol's School of Biological Sciences explained: "These findings could be the key in helping to tackle soil erosion. There are three possible ways root hairs could enhance soil, either the soil might bind directly to root hair surfaces, root hairs might release material that reinforces soil, or root hairs might release material that is processed by microbes into something that can reinforce soil.

"We hope our knowledge about the properties of plants that minimise soil erosion will allow the creation and selection of best-suited agricultural plants."

The team are now working to distinguish between these hypotheses and identify the molecules involved. (Source: AGDAILY, https://www.agdaily.com/)

Slow transit of sediment in Australia's Murray-Darling river system distorts environmental signal

The Paroo River at Eulo, Queensland, in Australia's Murray-Darling River system (Reka Fulop)

Sediment can take a million years or more to travel from the mountains of the Great Dividing Range to the mouth of the Murray River, new research has found.

The study, led by University of Wollongong (UOW) scientists, found that sediments in Australia's Murray-Darling Basin typically experience multiple episodes of storage on their journey, with cumulative residence times exceeding one million years in the downstream reaches of the Murray and Darling rivers.

The amount of time it takes sediment to travel from source to sink, and the frequent stops along the way, limits its ability to reveal information about the climate and geology of its source area.

Rivers act as sediment conveyor belts, keeping soils fertile, and delivering over 40 billion tonnes of particulate and dissolved material to the global ocean every year.

The primary source of the sediment is mountains, where the continuous interplay between tectonic forces, climate, and surface processes—such as chemical and physical weathering—breaks down rock, converting it to soil and sediment.

Changes in climate or tectonic forcing result in changes in the sediment flux, and the response of the landscape to these environmental forcings is recorded permanently by mineralogical, textural, or geochemical proxies.

Thus, each parcel of sediment carries information about the geology, geomorphology, and the climate of the contributing upland areas, information that builds the narrative of Earth's history.

However, large river systems are complex and their internal dynamics may buffer and distort environmental signals carried by sediments.

In the new study, published in Science Advances, researchers calculated sediment transit times in Australia's largest river system, the Murray-Darling Basin by measuring downstream changes in the ratios of cosmogenic radionuclides—rare isotopes produced by cosmic ray bombardment of surface rocks—in modern river sediment.

Lead author Dr. Reka Fulop, from UOW's School of Earth, Atmospheric and Life Sciences, said the results showed that environmental signals from the sediments will not only be distorted, but may even be completely erased.

"The message of our study is twofold: on the one hand sediment takes a very long time in transit, and on the other hand travel happens in many shorter episodes," Dr. Fulop said.

"At every stop on this very long journey, there is an opportunity for the 'message' (environmental signal) that each parcel of sediment carries to be altered or erased."

The Murray-Darling basin has a subtropical climate with a marked latitudinal gradient of contrasting climatic settings. In the northern part, the Darling sub-basin has weak dominance of summer monsoon rainfall, whereas in the southern part, the Murray sub-basin is influenced more strongly by winter precipitation associated with Southern Hemisphere westerly winds.

As a consequence, studies have sought to use Murray-Darling Basin sedimentary archives as proxies of past hydroclimate variability by applying geochemical fingerprinting techniques to discriminate between Darling versus Murray sediment sources.

The inherent assumption behind these studies is that sediment will move quickly from source to sink and any variability in sediment provenance is directly linked to changes in discharge and/or sediment production rates.

"Our study suggests that the transmission of environmental signals from Murray and Darling source-areas will potentially be out of sync—due to both the long cumulative residence times and the multiple episodes of burial and re-exposure—precluding any interpretations of source-area paleoclimate from these sediment," Dr. Fulop said.

The million year transit times and the reworking of old sediment observed in the Murray Darling Basin are likely to be a characteristic feature of similar river systems globally. This may limit the amount of interpretation possible from the sediment deposits of tectonically inactive continents such as Africa and Australia.

More information: R.-H. Fulop et al. Million-year lag times in a post-orogenic sediment conveyor, Science Advances (2020). DOI: 10.1126/sciadv.aaz8845

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

Erosion of the Himalayas is governed by tectonic movements, limiting climate change impacts on landscape formation

Highly sediment loaded Himalayan river after an intense monsoon rainfall event (Khudi river in central Nepal, by Maarten Lupker)

Researchers from the Centre de Recherches Pétrographiques et Géochimiques (CNRS / University of Lorraine), in collaboration with CEREGE have shown that erosion in the Himalayas is primarily governed by tectonic movements, which would limit the impact of climate change on the formation of Himalayan landscapes. Their study was published in Nature Geosciences on June 1, 2020.

The Himalayas offer spectacular landscapes and present both the highest peaks and the deepest valleys in the world. This mountain range has formed since the Indian and Eurasian plates began to collide. There, the Indian Monsoon produces intense seasonal precipitations, and glaciers cover the landscapes at elevations higher than 5,000 m. As these climatic conditions combine with active tectonic uplift, dynamic rivers and glaciers produce extreme erosion in the Himalayas. During the Quaternary (0—2.6 Ma), climatic and glacial cycles developed, glaciers advanced and retreated regularly, and river discharge fluctuated similarly. Thus, the capacity of rivers and glaciers to erode may have varied, which, in turn, may have affected the rate of erosion of the landscapes. Glaciers were on average much more extended during the Quaternary than in previous periods. Glacial increased extent is supposed to have led to a sharp increase in erosion in mountain ranges. But in the Himalayas, earthquakes, landslides and river incision quickly erase the markers of glacial advances and retreats, and few clues remain to validate these hypotheses.

Researchers began the study of this erosion by carrying out underwater drilling in 2015 initiated by C. France-Lanord (CRPG), in collaboration with the University of Bremen (Germany). The samples were then analyzed by CRPG and CEREGE researchers as part of the thesis of Sébastien Lénard, doctoral student at the CRPG. To determine past erosion rates, these researchers measured the concentration of beryllium 10 (10Be) accumulated in the quartz crystals that make up these sediments. As a cosmogenic nuclide, 10Be is a nuclide produced during the nuclear interaction between high-energy particles from cosmic radiation and the atoms of the minerals of rocks close to the earth's surface. Because cosmic ray particles are very effectively attenuated by matter, the production of these nuclides in minerals directly depends on the depth of rocks below the earth's surface.

For example, at 40 cm below the surface, the production of 10Be is half the production for a mineral at the surface. When a mountain slope or soil is eroded, a rock initially located a few meters underground approaches the surface and accumulates cosmogenic nuclides in its minerals. This accumulation depends directly on the rate of erosion of the surface: for a rapidly eroding surface, the rock is rapidly approaching the surface, and its minerals do not have time to accumulate a high concentration of 10Be. Using this property, earth scientists get a relatively direct tool for estimating erosion rates.

Unexpectedly, during the past six million years, the erosion rates are on average very close to the modern erosion rates in the Himalayas, around 1 mm/year. They neither show an increasing trend nor a decreasing trend at the Quaternary transition, despite the marked increase in glacier extension and glacial erosion in the Himalayas since this transition. These results suggest that tectonic movements exert a major control on erosion in the Himalayas, and that climatic changes would have only a limited impact on the formation of the Himalayan landscapes.

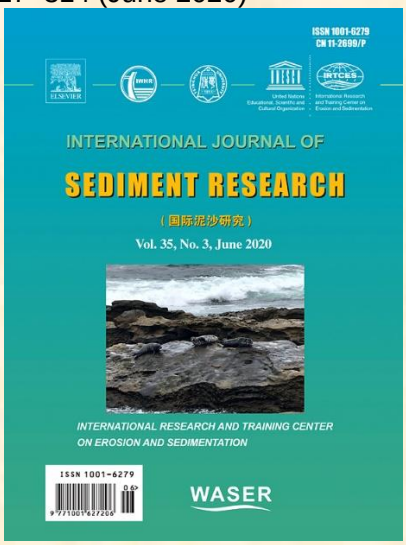
More information: Sebastien J. P. Lenard et al. Steady erosion rates in the Himalayas through late Cenozoic climatic changes, Nature Geoscience (2020). DOI: 10.1038/s41561-020-0585-2

(Source: PHYS.ORG)

PUBLICATIONS

Papers Published in the International Journal of Sediment Research Volume 35, No. 3, 2020

Pages 227–314 (June 2020)



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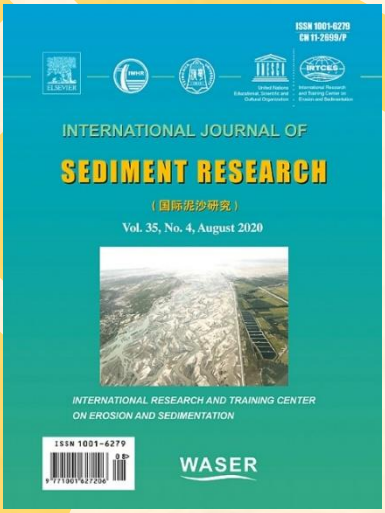

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Full papers are available at ScienceDirect: https://www.sciencedirect.com/journal/international-journal-of-sediment-research with free access to the paper abstracts.

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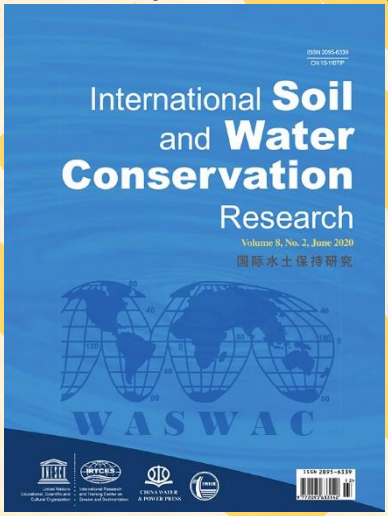

International Soil and Water Conservation Research
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COMING EVENTS

RIVER BASINS 2020 (Hungary, December 3-4, 2020)

"River Basins"- International Conference on Monitoring, Modelling and Management of River Basins
Date: 03 – 04 December 2020
Venue: Budapest University of Technology and Economics, Budapest, Hungary
Summary: RIVER BASINS is a conference which provides a platform for the exchange of recent progresses and research in the field of river basin management. This includes the quantification of water and mass fluxes, the investigation of processes in river systems and ecological research as well as the implementation of promising management strategies. Originally promoted and hosted by KIT Karlsruhe, for this time the edition RIVER BASINS 2020 (http://www.riverbasins.kit.edu) will be hosted by Budapest University of Technology and Economics (BUTE) in a beautiful venue with view on the Danube. All participants of the RIVER BASINS 2020 with accepted contributions will have the opportunity to submit a paper to be published in the journal Water, in a special issue named after RIVER BASINS 2020 conference theme (https://www.mdpi.com/journal/water/special_issues/Solids_River_Basins). Water (Impact Factor 2018: 2.524) is a peer-reviewed open access journal on water science and technology, including the ecology and management of water resources, and is published monthly online by MDPI.
Theme:
Solids in River Basins – Soil and particle bound pollutants, with focus on Modelling, Monitoring and Management
URL: https://www.riverbasins.kit.edu/
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e-mail: riverbasins?iwg.kit.edu

3rd International Youth Forum on Soil and Water Conservation (Iran, May 16-21, 2021)

Date: May 16-21, 2021
Venue: Tarbiat Modares University, Noor, Iran
Organizers:
World Association of Soil and Water Conservation (WASWAC)
Faculty of Natural Resources and Marine Sciences, Tarbiat Modares University, Iran
Sponsors:
World Association of Soil and Water Conservation (WASWAC)
Co-sponsors:
Watershed Management Society of Iran
Gorgan University of Agricultural Sciences & Natural Resources
Chinese Society of Soil and Water Conservation
Institute of Soil and Water Conservation, CAS & MWR
Datum Technology
Secretariat:
Faculty of Natural Resources and Marine Sciences, Tarbiat Modares University
Summary: The International Youth Forum on Soil and Water Conservation (IYFSWC) is a triennial event initiated by the World Association of Soil and Water Conservation (WASWAC). Two such conferences have now been held in Nanchang, China and Moscow, Russia in 2015 and 2018. With support from related international associations, and with the participation of experts and scholars worldwide, the IYFSWC has attracted wide attention and has become an important and popular event. The IYFSWC provides an opportunity for young scientists and early-career researchers to exchange ideas, research results and advanced techniques in soil and water conservation, and develop collaboration and friendships. The 3rd International Youth Forum on Soil and Water Conservation will be held in Tarbiat Modares University, Noor, Iran during May 16-21, 2021.
Overall Theme:
Soil and Water Conservation (SWC) under Changing Environments
Topics of the Conference (tentative):
1. Smart SWC
2. Adaptive SWC
3. Youth Roles in SWC
4. Climate Change and SWC
5. SWC in Developing Countries
6. Performance Evaluation of SWC Projects
7. Impacts and Possible Solutions of COVID-19 Pandemic on SWC Practices
URL: www.IYFSWC.modares.ac.ir
Contacts: IYFSWC@modares.ac.ir

World's Large Rivers Conference 2021 (Russia, August 2-6, 2021)

Date: August 2-6, 2021
Venue: Moscow, Russia
Summary: This WASER- / ISI-co-sponsored conference aims to provide a global forum for a wide-ranging discussion of key issues related to research on large rivers and to their effective and sustainable management, involving both scientists and decision makers. The conference will be organised by MSU - Lomonosov Moscow State University, Russia, and BOKU - University of Natural Resources and Life Sciences, Vienna, Austria. We kindly ask all interested authors to submit their work within the topics of
- Hydrology, Hydraulics & Hydroclimatic Impacts
- Sediment Transport & River Morphology
- River Pollution, Ecology & Restoration
- Integrated River Management

Special focus will be given this time to **Climate Change** and its impact - not only in general, but also specifically related to **Russian and Arctic Rivers**.
Supported by: WASER World Association for Sedimentation and Erosion Research; **UNESCO** United Nations Educational, Scientific and Cultural Organization; **IAHR** International Association of Hydro-Environment Engineering and Research; **IAHS** International Association of Hydrological Sciences; **IAG** International Association of Geomorphologists. All WASER- and ISI-members can benefit from a reduction of conference fees of 10%.
URL: http://worldslargerivers.boku.ac.at/wlr/

(LOC: Due to the Corona Virus the World´s Large Rivers Conference in Moscow has been postponed by one year and will take place in Moscow from 2-6 August 2021.)

The 7th International Conference on Estuaries and Coasts (Shanghai, China, October 18-21, 2021)

Date: October 18-21, 2021 (Tentative)
Venue: East China Normal University, Shanghai, China
Organizers:
East China Normal University
Sponsors: International Research and Training Center on Erosion and Sediment Research (IRTCES); World Association for Erosion and Sediment Research (WASER)
Co-sponsors: International Association for Hydro-Environment Engineering and Research (IAHR).....(to be invited)
Secretariat: East China Normal University
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). Six such conferences have now been held in Hangzhou and Guangzhou, China; Sendai, Japan; Hanoi, Vietnam; Muscat, Oman, and Caen, France in 2003, 2006, 2009, 2012, 2015 and 2018. 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 7th International Conference on Estuaries and Coasts (ICEC-2021) will be held in the East China Normal University, Shanghai, China during October 18-21, 2021.
Overall Theme:
Anthropocene Coasts
Topics of the Conference (tentative)**:**
1. Hydrodynamics in estuaries and coasts: tides, waves, circulations, and their interactions;
2. Sediment transport dynamics: sand, mud and their mixture;
3. Multi-scale morphodynamics: tidal flats, estuaries, deltas, beaches, dunes, eco-morphodynamics…;
4. Coastal management: flood defense, ecosystem conservation, human-nature interactions…
URL: (to be provided)
Contacts: (to be provided)

15th International Symposium on River Sedimentation (Florence, Italy, September, 2022)

Date: September, 2022 (Three consecutive days at the end of August / beginning of September, 2022)
Venue: Florence, Italy
Organizer: University of Florence and University of Padua
Sponsors: International Research and Training Center on Erosion and Sediment Research (IRTCES); World Association for Erosion and Sediment Research (WASER)
Co-sponsors: International Association for Hydro-Environment Engineering and Research (IAHR).....(to be invited)
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 (tentative)
The symposium topics include (tentative):
1. Sediment transport
2. Reservoir sedimentation
3. River morphodynamics
4. Coastal morphodynamics
5. Ecomorphodynamics
6. Sediment related disaster
7. Plastic in river and coastal systems
8. Interaction between sediment dynamics and hydraulic structures
9. Integrated Sediment Management at the River Basin Scale
10. Social, economic & political problems related to sediment and water management
URL: (to be provided)
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World Association for Sedimentation & Erosion Research

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WORLD ASSOCIATION FOR SEDIMENTATION AND EROSION RESEARCH

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