

INTERNATIONAL SEDIMENT INITIATIVE

NEWSLETTER

Reporting ISI news to you quarterly

No. 54 March 26, 2020

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NEWS

Message from Ms Audrey Azoulay, Director-General of UNESCO, on the occasion of World Water Day



Water will be more important than oil this century. This prediction, made in 1994 by former Secretary-General of the United Nations Boutros Boutros-Ghali, has alarming resonance in 2020.

Water resources, in terms of both their quantity and their quality, are under threat. This is because climate change, now in full swing, increases the risk of water shortages.

World Water Day draws attention to the links between global warming and the world water issue.

Access to water and to basic sanitation infrastructure is already precarious in several regions. Today, four billion people worldwide are forced to contend with water scarcity. Studies predict that accelerated global warming will so exacerbate the problem that by 2050, 52% of the earth's population could be living in areas subjected to water stress. The first victims of this insufficiency will be girls and women, a circumstance which is likely to increase inequality even further throughout the world.

A water crisis is a global crisis. Without sustainable access to water, we will be unable to achieve goals such as quality education or the development of more prosperous, fairer societies. History has demonstrated this. In China and in the Middle East, for example, the major rivers (the Yangtze, Nile and Euphrates) made the first great agrarian and urban civilizations possible.

Given the urgency of the situation, the coming decade needs to be one of action. As the ultimate forum for global conversation, UNESCO has a unique role to play. It was with this in mind that on 24 February, 2020 the Organization hosted the opening of the 52nd Session of the Intergovernmental Panel on Climate Change (IPCC).

In the same spirit, the United Nations World Water Development Report (WWDR), published

by UNESCO in collaboration with the UN-Water family, will be focused on climate change. The WWDR will set out concrete solutions for ensuring access to water for all: improved water resources management, the mitigation of water-related hazards, easier and more sustainable access to sanitation.

However, action to save the planet and its water will not be useful in the long term unless we make sure that future generations are fully involved. That is the point of environmental education, which is also education about water and about how we can better manage and preserve it. UNESCO has called upon its Member States to incorporate these issues into their school curricula, from pre-primary to elementary, and will share its technical expertise to help them with this undertaking.

For UNESCO, this day is not just about issuing a distressing assessment of the current state of affairs; it must also be about taking action.

And so on World Water Day, we call on States, civil society and regular people to take a stand for the blue gold about which Antoine de Saint-Exupéry said the following in *Terre des hommes* (Wind, Sand and Stars): "Water, thou hast no taste, no colour, no odour; canst not be defined, art relished while ever mysterious. Not necessary to life, but rather life itself [...]". (Source: UNESCO)

President Xi highlights Yellow River development

Ecological protection a priority for basin; water should be a controlling resource



(January 4, 2020) President Xi Jinping on Friday underscored the importance of heightened efforts in ecological protection and pursuing high-quality development in the Yellow River Basin.

Xi, who is also general secretary of the Communist Party of China Central Committee and chairman of the Central Military Commission, made the remarks as he presided over the sixth

meeting of the Central Committee for Financial and Economic Affairs. He heads the committee.

It is important to follow the principles of ecological protection and high-quality development in compiling a plan for the river basin's development, and then ensure its implementation, a statement released after the meeting said.

It also called for efforts to follow an ecology-first policy, including green development, and to enable the transformation from too much intervention and overexploitation to natural restoration and recuperation.

The meeting underlined the significance of water conservation, and listed measures to curb unreasonable water consumption. Water utilization must be transformed from inefficiency to more economical methods, the meeting decided.

Different areas must give play to their comparative strengths and develop sectors such as grain production, other agriculture, industry and commerce based on natural conditions, the statement said.

The meeting also laid great emphasis on solving the major issues in the river basin area, saying that projects such as water source conservation, mitigation of soil erosion, comprehensive treatment of air pollution and treatment of polluted soil must move forward.

Pollution control in the Yellow River Basin must be stepped up, with greater water conservation efforts to replenish the water volume in the river, the statement said.

It also urged efforts to push forward the development of city clusters, including Lanzhou and Xining, and to enable the coordinated development of cities in the middle reaches of the Yellow River.

The leading role of key cities, including Xi'an and Zhengzhou, must be strengthened, the statement said, adding that city clusters in the Shandong Peninsula must play a pioneering role.

To force adjustments in industrial structure, the statement said, water should be used as an evaluation standard for land use and industrial production volume.

A project dealing with the protection of cultural heritage along the river will be implemented, and a Yellow River culture and tourism belt with international influence will be developed, the statement said.

The Yellow River Basin, which has a watershed of more than 752,000 square kilometers and covers nine provincial areas,

sustains a population of 420 million people, or 30.3 percent of the nation's total, and a GDP of 2.39 trillion yuan (\$343 billion), or 26.5 percent of the national total, as of the end of 2018.

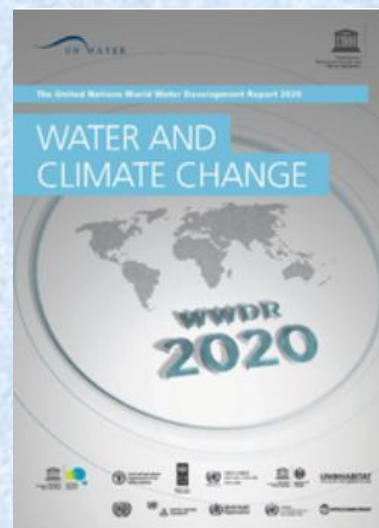
Xi has always attached great importance to the ecological protection of the Yellow River Basin.

He presided over a symposium in Zhengzhou in September during which the region's ecological protection and high-quality development was placed on par with other national strategies, such as the Yangtze River Economic Belt and the Guangdong-Hong Kong-Macao Greater Bay Area.

The meeting on Friday also included the discussion of issues involved in promoting the development of a double-city economic circle in Chongqing and Chengdu — both key cities in Southwest China.

It was decided that the leading role of Chengdu and Chongqing must be emphasized so that the area can be developed into an important economic hub and a center for scientific and technological innovation. (By XU WEI | China Daily | Updated: 2020-01-04)

World Water Development Report 2020 'Water and Climate Change'



Paris/Geneva, 22 March, 2020 — Climate change will affect the availability, quality and quantity of water needed for basic human needs, thus undermining enjoyment of the basic rights to safe drinking water and sanitation for billions of people, warns the latest UN World Water Development Report. The authors call on States to make more concrete commitments to address the challenge.

Such a deterioration of the situation would only hinder achievement of Sustainable Development Goal 6 which is part of the 2030 Agenda for Sustainable Development, according

to which access to safe drinking water and sanitation must be guaranteed for all within ten years. This will be a considerable challenge – 2.2 billion people currently do not have access to safely managed drinking water, and 4.2 billion, or 55% of the world's population, are without safely managed sanitation.

Water use has increased six fold over the past century and is rising by about 1% a year. However, it is estimated that climate change, along with the increasing frequency and intensity of extreme events – storms, floods and droughts, will aggravate the situation in countries already currently experiencing 'water stress' and generate similar problems in areas that have not been severely affected. Furthermore, the report highlights the fact that poor water management tends to exacerbate the impacts of climate change, not only on water resources but on society as a whole.

The Director-General of UNESCO, Audrey Azoulay, stresses "that water does not need to be a problem – it can be part of the solution. Water can support efforts to both mitigate and adapt to climate change."

Health effects, threat to biodiversity

Indeed, water quality will be affected by increased water temperatures and a decrease in dissolved oxygen, leading to a reduction in the self-purification capacity of freshwater basins. We will see increased risks of water pollution and pathogen contamination caused by floods or higher concentrations of pollutants during periods of drought. In addition to the impact on food production, the effects on physical and mental health – linked to disease, injury, financial loss and the displacement of people – are therefore likely to be considerable.

Many ecosystems, particularly forests and wetlands, are also under threat, reducing biodiversity. Water supplies will be affected, not only for agriculture – which accounts for 69% of freshwater withdrawals – but also for industry, energy production and even fisheries.

Areas most at risk: archipelagos, mountains, tropics and Far North

Much of the impact of climate change on water resources will be manifested in the tropics, where most developing countries are located, with potentially apocalyptic consequences for small island states, some of which could be wiped off the map. Mountainous areas are also exceptionally vulnerable through impacts on mountain glaciers and snowcaps, which show a decreasing trend almost everywhere in the world. The authors recognize, however, that a number of uncertainties remain, particularly at the local level

and due to the seasonal variability of rainfall patterns.

Suggested solutions: adaptation and mitigation

In the face of these threats, the report highlights the two complementary strategies to be implemented – adaptation and mitigation:

Adaptation encompasses a combination of natural, technical and technological options, as well as social and institutional measures to mitigate damage and exploit the few positive consequences of climate change. It is likely to have very rapid benefits, mainly at the local level.

Mitigation consists of the human actions needed to reduce greenhouse gases (GHGs) emissions while exploiting carbon sinks to reduce the amount of CO₂ and other GHGs in the atmosphere. It can involve large geographical areas, but with gains that may spread over decades. However, the possibilities for mitigation in water management remain largely unrecognized.

Improved wastewater management

Wastewater treatment also contributes to climate change as it generates GHGs, accounting for an estimated 3% to 7% of all emissions. These emissions arise from both the energy required for wastewater treatment and the biochemical processes used. But because of the decomposition of the organic matter it contains, untreated wastewater is also a major source of methane, a powerful greenhouse gas. The report points out that wastewater harbours more energy than is needed for its treatment, provided, of course, that it is harnessed. It is estimated that worldwide, between 80% and 90% of wastewater is discharged to the environment without any form of treatment.

In concrete terms, the optimal management of water resources means investing in modern treatment techniques that allow for the extraction of methane from organic matter and then use this biogas to generate the energy needed to run the process, as is already done in water-scarce countries such as Jordan, Mexico, Peru and Thailand. These techniques have enabled the public utilities concerned to reduce emissions by thousands of tonnes of CO₂, while making financial savings and improving the quality of the service.

The report also mentions innovative water management interventions such as fog capture, or more traditional ones such as wetland protection, as well as proven 'conservation agriculture' techniques. These make it possible to preserve soil structure, organic matter and moisture, despite lower rainfall. Similarly, the

'reuse' of partially treated wastewater for agriculture and industry, without necessarily making it safe to drink, is another interesting approach.

Prioritizing water

Unfortunately, note the authors, while the need to combat climate change through better management of the water cycle is well recognized, it is not being translated into reality. "The word 'water' rarely appears in international climate agreements," observes Audrey Azoulay. The 'nationally determined contributions' submitted by States under the Paris Agreement remain general in nature, without proposing specific plans for water. While a majority of countries recognize water in their 'portfolio of actions', few of them have actually calculated the costs of these actions and even fewer have put forward specific projects. Meanwhile, the possibilities for synergies between adaptation and mitigation measures are often neglected.

Accessing climate funds

The question of finance is obviously crucial. The authors point out that water resources management and water supply and sanitation services are underfunded and require greater attention from States. They argue that there are increasing opportunities to systematically integrate adaptation and mitigation planning into water-related investments, in order to make them more attractive to donors.

A good example of this is a Green Climate Fund project in Sri Lanka. This aims to improve irrigation systems in vulnerable village communities and promote climate-smart agricultural practices in three river basins, offering both climate adaptation and mitigation benefits, while conserving water and protecting drinking water sources.

Various water and climate change initiatives can also bring co-benefits such as job creation, improved public health, poverty reduction, promotion of gender equality and improved livelihoods, further enhancing their attractiveness to donors.

The adoption of integrated adaptation and mitigation measures is a win-win proposition, conclude the authors of the report. They are clearly beneficial for the sustainable management of water resources and for the human right to safe drinking water and sanitation. They also directly address the causes and consequences of climate change, including in terms of the response to extreme weather events. Finally, they contribute to the achievement of several of the Sustainable Development Goals.

The United Nations World Water Development Report is UN-Water's flagship report on water and sanitation issues, focusing on a different theme each year. The report is published by UNESCO, on behalf of UN-Water and its production is coordinated by the UNESCO World Water Assessment Programme. Launched in conjunction with World Water Day, the report provides decision-makers with knowledge and tools to formulate and implement sustainable water policies.

The World Water Development Report 2020 – Water and Climate Change is available at:

<https://en.unesco.org/themes/water-security/wwap/wwdr/2020/>

(Source: UN-WATER)

The relationship between Andean vegetation, precipitation and soil erosion



Plants may stabilize slopes, yet rainfall often intensifies soil erosion. Until now, just how these two things interact to form mountain topography was only clear for a few small regions on Earth. In a new study, Professor Todd Ehlers, Dr. Jessica Starke and Dr. Mirjam Schaller of the Geosciences Department at the University of Tübingen, Germany, investigated how plants and climate shape topography. They did this in a large study of the 3,500 kilometer long western edge of the Andes Mountains in Peru and Chile. They found that the question of how plants influence the landscape and erosion can have different answers, depending on what area is investigated. Key factors identified are the climate zone and plant cover. In the dry Atacama Desert, for example, sparse vegetation is sufficient to hold the soil in place; while higher erosion rates can be seen in the wetter and more temperate regions where plant cover is denser. The study has been published in the latest edition of the journal *Science*.

The area of the Andes investigated extends almost the entire length of South America, from 6 to 36 degrees south latitude. This region covers six climate zones, from very dry to temperate.

"Along the western edge of the Andes, many individual studies have determined the rates of soil erosion over the past million years," says Todd Ehlers. "Yet the results were inconsistent and could not be easily explained." To evaluate the rate of erosion, the researchers used what are known as cosmogenic nuclides, which are produced on the Earth's surface by cosmic rays from space. The nuclides accumulate only when the ground is exposed. Using the concentration of the isotopes from sediments in 86 rivers, the researchers could calculate how fast the mountains eroded. "We supplemented earlier results from 74 study sites in Peru and Chile with 12 new measurements to fill the gaps," says Ehlers. This enabled him and his team to study changes in mountain erosion in different vegetation and climate zones along the Andes. The erosion rates varied between 1.4 meters to 150 meters per million years.

Complex connections

Plants use their roots to hold the soil onto slopes and slow down water flowing over the surface, thereby stabilizing slopes. But, plants can also enhance erosion by using their roots to break down rocks into soil that is more easily eroded. However, the situation becomes more complex when rainfall is taken into account. Rainfall is important for vegetation, but is also a key driver for soil erosion. "You might think that the denser the plant cover, the less erosion there would be. This simple correlation is correct for some regions of the Andes" Ehlers says. "However, other factors such as the rate of rainfall also play an important role. It's exciting to now see how mountain erosion reflects this interaction between plants and rainfall." For example, in the temperate Andean regions there is dense plant cover due to heavy rainfall. This rainfall is high enough that it increases soil erosion, despite the presence of dense vegetation. However, in regions with even denser vegetation than temperate areas, plants are able to outpace the effects of rainfall on erosion and slopes are stabilized, and steeper.

"Our large-scale investigation across this broad climate and vegetation gradient in the Andes helps us to better understand the observations from many other studies," Ehlers explains. "Previous studies were mostly conducted in geographic regions restricted in terms of their environment or climate. It's only when working with a large region that you see the big picture of how plants and climate interact with landscapes." Vegetation forms a link between the biosphere and the Earth's surface. "Our study is an example of a new scientific frontier where the Earth and life sciences meet. We are learning more and more about how strongly the solid and living parts of the Earth interact, and we can

observe the effects of these interactions over long time scales of thousands of years," says Ehlers. (by Dr. Karl Guido Rijkhoek, University of Tübingen. Source: <https://phys.org/>)

More information: J. Starke et al. Latitudinal effect of vegetation on erosion rates identified along western South America, *Science* (2020). DOI: 10.1126/science.aaz0840

Sediment Study of Georgica Pond, Long Island, New York, USA



In its ongoing effort to remediate the degraded condition of Georgica Pond, which has experienced toxic algal blooms every summer since 2012, a group of pondfront property owners sought and received permission from the East Hampton Town Trustees to take part in a sediment chronology study.

Sara Davison, executive director of the Friends of Georgica Pond Foundation, presented a proposal at the trustees' meeting on Monday that a mechanized vessel be used to extract a one-meter-long, four-inch-diameter core from the pond bottom in the coming summer. The proposal is a collaboration of the Gobler Lab at Stony Brook University's School of Marine and Atmospheric Sciences and Matthew Waters of Auburn University's Department of Crop, Soil, and Environmental Sciences, whom Ms. Davison described as an expert on lake coring.

Georgica Pond is eutrophic, with excessive nitrogen inputs from ground and surface water runoff feeding dense plant life, the decomposition of which is blamed for choking the pond of oxygen, the condition known as hypoxia. To combat that decomposition, the Friends of Georgica Pond Foundation has operated an aquatic weed harvester in recent summers to remove macroalgae before its decomposition can promote blooms of cyanobacteria, the blue-green algae that have beset the pond annually. (The group recently received permission to operate the harvester again this year.)

"Paleolimnological studies that employ sediment coring," according to the proposal, "offer

an opportunity to explore and reconstruct the history of eutrophication [harmful algal blooms] and other algae in Georgica Pond and may, in turn, provide insight regarding the history of the watershed.” Paleolimnological studies are based on analyses of sediment cores and biological records.

The proposal is part of a larger project. “They’re designing an experiment for several lakes on Long Island,” Ms. Davison said, “and they would like to include Georgica Pond.”

Dr. Waters is the author of “A 4,700-Year History of Cyanobacteria Toxin Production in a Shallow Subtropical Lake,” a study in which sediment coring revealed three periods of toxin abundance, only one of which was associated with recent, European settlement in the Lake Griffin watershed in central Florida.

The hope, Ms. Davison said, is “to learn more about the commonness of blue-green algae in the environment of Georgica Pond” and how it relates to land use.

The core will be split between the labs at Stony Brook and Auburn. At the latter its strata will be dated using isotopes and analyzed for levels of organic carbon, organic nitrogen, and other geochemical parameters. “The geochronology of algal communities will be assessed via quantification of algal pigments, algal toxins, harmful algal blooms, and associated toxin synthesis genes within the core,” according to the proposal. (By Christopher Walsh, Source: <https://www.easthamptonstar.com/>)

Ministerial Meeting of Lancang-Mekong Water Resources Cooperation commenced in Beijing



On December 17, 2019, a Ministerial Meeting of Lancang-Mekong Water Resources Cooperation (LMWC) commenced in Beijing, China. H.E. E Jingping, Minister of Water Resources, the People’s Republic of China, presided over the meeting and delivered a keynote speech. H.E. Bun Hean, State Secretary of Ministry of Water Resources and Meteorology, the Kingdom of Cambodia, H.E. Sommad

Pholsena, Minister of Natural Resources and Environment, the Lao People’s Democratic Republic, H.E. Win Khant, Executive Secretary of the Ministry of Transport and Communications, the Republic of the Union of Myanmar, H.E. Tewan Liptapallop, Minister Attached to the Prime Minister’s Office, the Kingdom of Thailand, and H.E. Le Cong Thanh, Deputy Minister of Natural Resources and Environment, the Socialist Republic of Vietnam, attended the meeting and made keynote speeches.

Minister E Jingping pointed out that this meeting was an essential measure to implement the consensus reached at two meetings among the state leaders on Mekong-Lancang cooperation, and an important platform for six countries to enhance policy dialogue, information exchange and technical cooperation in the field of water resources. The theme of the meeting – “Enhancing Water Partnership for Sustainable Development” – reflects the good wishes of China and the Mekong countries to build a community of shared future for the Lancang-Mekong countries, and shows the common determination of the six countries to realize water-related goals of the UN 2030 Agenda for Sustainable Development with every endeavor.

Minister E stressed that by adhering to the concept of development-prioritized, equal consultation, pragmatism and efficiency, and openness and inclusiveness, LMWC shall reinforce the establishment of a cooperation mechanism, push forward rational development and utilization, create a high-level information platform, and advance joint consultation, common construction and sharing, so as to build up LMWC as a “flagship brand” of Lancang-Mekong cooperation. Minister E raised four points to deepen LMWC. First, LMWC shall fully respect the right of six countries for rational development and utilization of water resources. Second, LMWC shall take the major concerns of each other into full consideration. Third, win-win results of six countries can only be achieved through joint cooperation in the Lancang-Mekong Basin. Fourth, LMWC should be conducted by the Mekong-Lancang countries themselves based on discussions.

Minister E put forward three aspirations to carry out the outcomes of this meeting. First, deeply research the philosophy of LMWC, and reach cooperation consensus. Second, define major principles for development and utilization of water and hydropower resources in the Lancang-Mekong Basin, and clarify responsibilities and rights of concerned countries. Third, strengthen the publicity of cooperative consensus of LMWC, to create public support and sound atmosphere for LMWC.

Ministers from Cambodia, Laos, Myanmar, Thailand and Vietnam spoke highly of the great significance of the meeting, undertook in-depth experience exchange on water governance, reviewed cooperation outcomes, and put forward aspirations and suggestions on deepening LMWC. All countries expressed willingness to strengthen consultation and dialogue, experience exchange and project coordination, enhance mutual benefit and trust, promote the implementation of the outcome of this ministerial meeting, and further upgrade the level of LMWC.

The meeting heard the work report of the Joint Working Group on LMWC, unveiled the Joint Statement of the Ministerial Meeting on LMWC and the Proposed List of the Programs on LMWC, and witnessed the signing of the Memorandum of Understanding on Cooperation between the Lancang-Mekong Water Resources Cooperation Center and the Secretariat of the Mekong River Commission.

More than 60 representatives from water departments and ministries of foreign affairs of the six countries, and the Secretariat of the Mekong River Commission attended the meeting.

(Source: MWR, <http://www.mwr.gov.cn/>)

Tips on COVID-19 Prevention



More information and tips on COVID-19 are available at:

WHO:

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

UN-WATER COVID -19 infographic:

<https://www.worldwaterday.org/2020-home/share/covid-19-be-safe/>

China Daily:

https://www.chinadaily.com.cn/china/special_cove rage/2020novelcoronavirus

Xinhua:

<http://www.xinhuanet.com/english/special/2020cor onavirus/index.htm>

Global MediXchange for Combating COVID-19

(GMCC): <https://covid-19.alibabacloud.com/>

Handbook of COVID-19 Prevention and

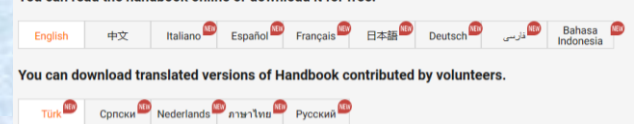
Treatment (English Version):

https://www.alibabacloud.com/zh/universal-service/pdf_reader?pdf=Handbook of COVID 19 Prevention en Mobile.pdf

Handbook in more languages can be downloaded freely at GMCC:

<https://covid-19.alibabacloud.com/>

You can read the handbook online or download it for free.



PUBLICATIONS



Papers Published in the International Journal of Sediment Research Volume 35, No. 1, 2020

Pages 1-114 (Feb. 2020)

Numerical simulation of incipient particle motion
Ali Nasrollahi, Ali Akbar Salehi Neyshabouri, Goodarz Ahmadi, Masoud Montazeri Namin
Pages 1-14

Two-dimensional numerical simulation of sediment transport using improved critical shear stress methods
Zhiyong Feng, Guangming Tan, Junqiang Xia, Caiwen Shu, ... Ran Yi
Pages 15-26

Experimental study of near-bed concentration and sediment vertical mixing parameter for vertical concentration distribution in the surf zone
Yang Zhang, Zhili Zou, Wushan Xue, Dapeng Sun
Pages 27-41

Turbulence characteristics of flow past submerged vanes
Himanshu Sharma, Zulfequar Ahmad
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The uncertainty of the Shannon entropy model for shear stress distribution in circular channels
Amin Kazemian-Kale, Hossein Bonakdari, Azadeh Gholami, Bahram Gharabaghi
Pages 57-68

Appraisal of the carbon to nitrogen (C/N) ratio in the bed sediment of the Betwa River, Peninsular India
Madavi Venkatesh, Anshumali
Pages 69-78

Linear spectral unmixing algorithm for modelling suspended sediment concentration of flash floods, upper Tekeze River, Ethiopia
Hagos G. Gebreslassie, Assefa M. Melesse, Kevin Bishop, Azage G. Gebremariam
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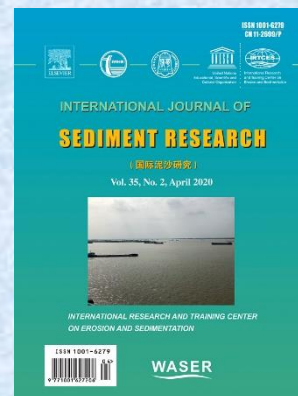
Bioelectricity generation and remediation of sulfide contaminated tidal flat sediment
M. Azizul Moqsud
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Regularity of sediment transport and sedimentation during

floods in the lower Yellow River, China
Qingchao Guo, Zhao Zheng, Liemin Huang, Anjun Deng
Pages 97-104

Measuring the geometry of a developing scour hole in clear-water conditions using underwater sonar scanning
Ashley Rogers, Costantino Manes, Toru Tsuzaki
Pages 105-114

Full papers are available at ScienceDirect:
<https://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 35, No. 2, 2020

Pages 115-226 (April. 2020)

Uniform and graded bed-load sediment transport in a degrading channel with non-equilibrium conditions
Khabat Khosravi, Amir H.N. Chegini, James R. Cooper, Prasad Daggupati, ... Luca Mao
Pages 115-124

Incipient sediment motion based on turbulent fluctuations
Wan Hanna Melini Wan Mohtar, Ji Wang Lee, Najwa Izzaty Mohammad Azha, Nian-Sheng Cheng
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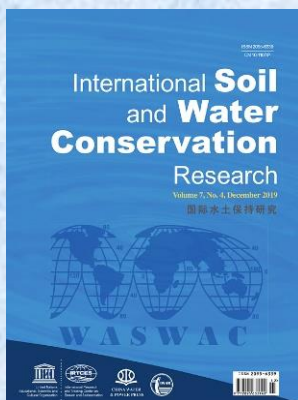
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COMING EVENTS

CoastLab 2020 (China, May 25-29, 2020)

Date: May 25-29, 2020

Venue: Zhoushan, China

Hosts: Zhejiang University & Dalian University of Technology, co-organized by Sichuan University & Zhejiang Ocean University

Summary: On behalf of the CoastLab2020 Organizing Committees, it is our great pleasure to invite you to participate in the 8th International Conference of Physical Modeling in Coastal Science and Engineering (CoastLab2020) during the 25th -29th of May, 2020 in Zhoushan, China. CoastLab2020 is organized under the auspices of the International Association of Hydro-Environment Engineering and Research (IAHR) and will be jointly hosted by Zhejiang University, Dalian University of Technology, Sichuan University and Zhejiang Ocean University. CoastLab2020 will build on the successes of previous conferences held in Porto (2006), Bari (2008), Barcelona (2010), Ghent (2012), Varna (2014), Ottawa (2016) and Santander (2018). It will provide a stimulating and enriching forum to discuss the latest developments in physical modeling applied to coastal engineering and in new trends in coastal sciences. We are looking forward to collaborating with the Coastal and Maritime Hydraulics Committee of IAHR to host a successful CoastLab2020 in Zhoushan. (Prof. Pengzhi Lin, Prof. Zhiguo He, and Prof. Dezhi Ning)

URL: <http://www.coastlab2020.com/>

Conference Email: coastlab2020@zju.edu.cn

(LOC: the Zhoushan conference shall be postponed from May 25-29 to about 3~4 months later. The exact dates of the conference will be carefully selected and then announced ASAP, not later than 1st May, 2020.)

International Symposium on River sediment quality and quantity (Poland, June 1-5, 2020)

Date: June 1-5, 2020

Venue: Bydgoszcz, Poland

Summary: It is a pleasure on behalf of International Association of Hydrological Sciences (IAHS) - Commission on Continental Erosion (ICCE) to invite you to:

The International Symposium on River sediment quality and quantity: environmental, geochemical and ecological perspectives

The Symposium takes place in Bydgoszcz, Poland in June 1-5, 2020. Subjects of the Conference:

- Sediment quantity – cascades, budgets, yields
- Sediment impacts on river channel hydromorphology and management
- Sediment quality – geochemistry, nutrients, contaminants, emerging issues
- Sediment-biota interactions
- Business Day - inland waterways development in Middle-East Europe

Conference programme will include:

- Oral and poster thematic sessions
- Field excursion on Vistula river - ship and by bus
- Social events and post-conference tours
- Gala-dinner at Mill Island - a green oasis in the city centre
- Business Day

The first IAHS/ICCE International Symposium was held in Florence, Italy more than 30 years ago, and recent symposia have been held in Dundee, UK in 2006; Christchurch, New Zealand in 2008; Warsaw, Poland in 2010; Chengdu, China in 2012; New Orleans, USA in 2014; Okehampton, UK in 2016 and in Moscow, Russia in 2018. The 2020 ICCE Symposium will be held at Bydgoszcz in Poland, at the Kazimierz Wielki University.

URL: <https://icce2020.ukw.edu.pl/jednostka/icce2020>

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River Flow 2020 (The Netherlands, July 7-10, 2020)

Date: July 7-10, 2020

Venue: Delft, Netherlands

Summary: The 10th Conference on Fluvial Hydraulics under the auspices of IAHR, River Flow 2020, will be held in Delft, Netherlands, from 7 to 10 July 2020, (with masterclasses on the 6th of July). The conference themes are: rivers in urbanised areas; climate change and extreme events; river functions under pressure; nature based solutions; the healthy river; river resources: food, energy, water; the digital river; river fundamentals.

Deadline for abstract submission: 15 August 2019.

URL: <http://www.riverflow2020.nl>

World's Large Rivers Conference 2020 (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%.

More information:

URL: <http://worldslargerivers.boku.ac.at/wlr/>

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

8th International Conference on Flood Management (USA, Aug. 17-19, 2020)

Date: August 17 – 19, 2020

Venue: Iowa City, Iowa, USA

Hosted by: The University of Iowa, Iowa Flood Center, IIHR

Summary: The 8th International Conference on Flood Management (ICFM8) offers a platform to discuss a range of flood related issues and stimulate progress in the management of flood risk. The 8th International Conference on Flood Management (ICFM8) seeks to further advance global research, practice and policy in flood management. With an emphasis on 'resilience', the theme for ICFM8 marks the further progress of integrated approaches to flood management which were first embraced as the International Symposia on Flood Defence (Kassel 2000, Beijing 2002, Nijmegen 2005 and Toronto 2008), the precursor of the subsequent ICFM series (ICFM5 - Tokyo, 2011; ICFM6 - São Paulo 2014; ICFM7 - Leeds, 2017). ICFM8 will be held in Iowa City, Iowa, USA on August 17 - 19, 2020, and will be hosted by the Iowa Flood Center, a research group of the century old IIHR-Hydroscience & Engineering (IIHR) at The University of Iowa. The theme of ICFM8 is 'Lowering Risk by Increasing Resilience' and will focus on building resilience into current and future flood management strategies and approaches as envisioned by the United Nations programmatic documents Sustainable Development Goals (SDGs) and the Sendai agreement on Disaster Risk Reduction (DRR) adopted in 2015. The conference is an integral part of the week-long centennial celebrations at IIHR.

URL: <https://icfm2020.org/>

Contact: Marian Muste (marian-muste@uiowa.edu)

(LOC: we can organize the conference as planned if the conference participants submit their final papers in time (i.e., May 29, 2020). We are also considering alternatives such as virtual attendance or postponing the conference. No matter what, we will publish the papers submitted to the conference in the ICFM8 e-proceedings.)

ISI – Training Workshop on 'River Basin Sediment Monitoring and Management' (Koblenz, German, September 7-11, 2020)

Date: September 7 – 11, 2020

Venue: Federal Institute of Hydrology, Koblenz, Germany

Organizer: International Centre for Water Resources and Global Change under the auspices of UNESCO, German Federal Institute of Hydrology

Co-sponsors: International Sediment Initiative (ISI) of UNESCO IHP, International Research and Training Center on Erosion and Sediment Research (IRTCES).

Summary: The workshop on River Basin Sediment Monitoring and Management focuses on training and capacity building with a particular attention to:

- i) monitoring sediment dynamics in relation to (planned) river management or reservoir measures,
- ii) evaluation of monitoring results in terms of impact analysis and management and

- iii) communication and outreach of expert knowledge on sediment dynamics to support sustainable sediment management solutions, which highlight the need for integrated river basin management plans.

Major questions of the WS will be: What are main technical issues in sediment monitoring programs and how to cope with them? How simple/complex do we need to measure (e.g. simple flux measure to complex sediment budget) to provide empirical evidences for the specific management solution?

The workshop aims to provide knowledge on sediment measurement and monitoring, how to transfer measurement and monitoring results to management solution, how to improve current sediment management strategies to find sustainable solution and how to evolve from local river management to integrated landscape management. Although we will focus on inland waters, we also want to highlight possible impacts on downstream areas, including estuaries and coastal zones.

After a general introduction to the topic (1st day), the participants will conduct hands-on workshops on monitoring techniques and data analysis (2nd and 3rd day). During a field trip at the River Rhine, the participants will be introduced to various sensors and techniques for measuring suspended sediment characteristics and loads. On subsequent days the field data will be analyzed by the workshop participants. Their results will be presented in a best-practice guide on suspended sediment monitoring (4th day). Additionally, we offer an excursus about data management and data sharing principles in collaboration with the ISI database as well as with the GEMS/Water Data Centre for Water Quality (gemstat.org) (5th day).

Organization & Contact:

Thomas Hoffmann (Thomas.Hoffmann@bafg.de) and Stephan Dietrich (Dietrich@bafg.de)

14th International Conference on Hydrosience & Engineering (Turkey, September 22-25, 2020)

Date: September 22-25, 2020

Venue: Çesme, Turkey

Summary: 14th of the International Conference on Hydrosience & Engineering, ICHE 2020 will be held in Çesme, Turkey on September 22-25, 2020. The International Conference on Hydrosience & Engineering began in Washington DC in 1993, and followed by Beijing hosted ICHE in 1995, Cottbus (1998), Seoul (2000), Warsaw (2002), Brisbane (2004), Philadelphia (2006), Nagoya (2008), Chennai (2010), Orlando (2012), Hamburg (2014) Tainan (2016) and Chongqing (2018). These conferences provided a common ground researchers and engineers to report and discuss the latest scientific advancements and practitioner's solutions in hydrosience and engineering. ICHE 2020 conference aims to bring together researchers and practicing engineers to share the latest scientific and technological advancements in hydrosience and engineering, and will provide networking opportunities for future activities. Participants will be able to hear experts in the field discuss the latest achievements in issues relevant to Hydro-Engineering for Sustainable Development.

Conference Themes

- Coastal and Maritime Hydraulics
- Dam Hydraulics and Safety
- Computational Hydraulics and Turbulent flows
- Water Resources and Climate Change
- Fluvial Hydraulics and Waterway Navigation
- Water Quality and Ecohydraulics
- Watershed Hydrology and Management

- Sediment Transport and Reservoir Sedimentation
- Groundwater Flow and Contaminant Transport
- Hydropower and Sustainable Energy
- Urban Flooding and Drainage
- Advances in Laboratory Measurements and Instrumentation
- Field Measurements and Data Collection

Key Dates

- Abstract Submission: Sep. 1 – Nov. 15, 2019
- Full-Paper Submission: Feb. 1 – April 30, 2020
- Revised Full-Paper Submission: July 15, 2020
- Early Bird Registration: February 1 – July 15, 2020

URL: <https://www.iche2020.org/>

International Conference “Water, Megacities and Global Change” (France, Dec. 1-4, 2020)

Date: Dec. 1-4, 2020

Venue: UNESCO Headquarters, 125 avenue de Suffren, 75007 Paris, France

Summary: Paris, New York, Beijing, Mumbai, Tokyo, Buenos Aires, Mexico, Lagos... all Megacities – urban centers which accommodate more than 10 million inhabitants - are facing “mega”-challenges related to providing water services for their inhabitants, while managing their environment. Climate change effects of intensifying magnitude and global challenges such as sea level rise, increasing temperatures or urbanization, threaten these cities. Now, there is a need for action to achieve resilient cities. A transversal and multidimensional solution is proposed, based on the collaboration among scientists who advance knowledge, operators (in both the public and private sectors) who innovate technically and socio-politically, and local politicians who can support new, fairer and more efficient models of water governance, in constant interaction with civil society. The Second International Conference on “Water, Megacities and Global Change” (EauMega 2020), will take place from 1 to 4 December 2020 at UNESCO Headquarters in Paris, to bring all these actors together, 5 years after its first edition, also known as EauMega 2015.

Conference

website: <https://en.unesco.org/events/eaumega2020>

Contact: Alexandros Makarigakis

Programme Specialist

Division of Water Sciences, UNESCO

Tel.: +33 (0) 1 45 68 08 06

eaumega2020@unesco.org

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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Intergovernmental Hydrological
Programme (IHP)
UNESCO

ORGANISATION: UNESCO

| | |
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| Youssef Filali-Meknassi | UNESCO, Paris |
| Philippe Pypaert | UNESCO, Beijing |
| Anil Mishra | UNESCO, Paris |

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

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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
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