

# INTERNATIONAL SEDIMENT INITIATIVE

# NEWSLETTER

*Reporting ISI news to you quarterly*

No. 21 June 29, 2011

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## IN THIS ISSUE

### News

- ✧ ISI Steering Committee Core Member Meeting Held in Vienna on April 15, 2011 1
- ✧ International Conference on the Status and Future of the World's Large Rivers Held in Vienna on April 11-15, 2011 1
- ✧ UNESCO-IOS' visit to IRTCES 1
- ✧ ISI Steering Committee member Prof. Zhao-Yin Wang receives ASCE's Hans Albert Einstein Award 2
- ✧ U.S. NHI President Mr. G. A. Thomas Visits IRTCES 2
- ✧ The Fourth Yangtze Forum held in Nanjing (China) 3
- ✧ Gushing torrents discharged from Xiaolangdi Reservoir on Yellow River 3
- ✧ No-till Farming Prevents Erosion, Study Shows (USA) 3
- ✧ Sediment reduction plan unveiled (USA) 3
- ✧ More News in ISI Website 4

### Conference Report

- ✧ Vienna Declaration (International Conference on the Status and Future of the World's Large Rivers) 5

### Publication

- ✧ Papers Published in Issue 2 Volume 26 2011, IJSR 5
- ✧ Publications in ISI Information System 5

### Coming Events

- ✧ 4th International Conference on Estuaries and Coasts (Vietnam, Oct.8-11, 2012) 6
- ✧ ISI International Advanced Training Workshop on Water and Soil Conservation 6
- ✧ RCEM2011 - The 7th IAHR Symposium on River, Coastal and Estuarine Morphodynamics (Beijing, Sept. 6-8, 2011) 6
- ✧ Short Course "Modeling of River Migration at Multiple Scales: A GIS-based toolbox for river restoration" to be organized on Sept. 3-5, 2011 7
- ✧ APAC2011 - The 6th International Conference on Asian and Pacific Coasts (Hong Kong, Dec. 14-16, 2011) 7
- ✧ ISELE - International Symposium on Erosion and Landscape Evolution (USA, September 18-21, 2011) 7
- ✧ 5th International Conference on Flood Management (Japan, Sept.27-29, 2011) 8
- ✧ More Coming Events in ISI Website 8

Vienna Declaration 9



## NEWS

### ISI Steering Committee Core Member Meeting Held in Vienna on April 15, 2011



The UNESCO IHP-International Sedimentation Initiative (ISI) Steering Committee Core Member Meeting was held in Vienna, Austria on April 15, 2011. Participants include UNESCO representatives Dr. Anil Mishra and Dr. R. Jayakumar, the Chairman of the ISI Steering Committee Prof. Manfred Spreafico, ISI Secretariat (IRTCES) Prof. LIU Cheng, other steering committee members Prof. G. DiSivio, Mr. Jos Brils and Prof. Roberto Pizarro, and invited local participant Prof. Helmut Habersack from the University of Natural Resources and Life Sciences, Vienna.

Chaired by Prof. M. Spreafico, recent ISI activities and future planes were discussed, including: 1) ISI Status report; 2) Case studies progress report – fact sheets, synthesis report; 3) IRTCES- ISI Secretariat; 4) Publications; 5) Networking; 6) Events; and 7) Any other business.

### International Conference on the Status and Future of the World's Large Rivers Held in Vienna on April 11-15, 2011



The International Conference on the Status and Future of the World's Large Rivers was held in Vienna, Austria on April 11-15, 2011. The conference was organized by BOKU - University of Natural Resources and Life Sciences, Vienna, and sponsored by UNESCO, IAHR, IAHS, WASER, IAG, DG Environment and via donau. This 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. More than 550 abstracts covering all relevant topics and rivers (from the Amazon over the Congo, the Yellow River to the Siberian Rivers) were submitted to the conference and more than 400 participants coming from 73 nations (including all continents) participated in this important event. A Vienna Declaration agreed by the participants was formed to assess the existing and future needs of large rivers in order to better integrate their use, protection and restoration and to devise an action plan.

Several UNESCO-ISI Steering Committee members were invited to make presentations in the conference, including:

- Keynote lecture "The changing sediment loads of the world's large rivers" by Prof. Des Walling;
- Lecture "What strategic response to long - term morphological changes of large rivers?" by Prof. G. Di Silvio
- Lecture "Integrated water management in the Rhine River basin" by Prof. M. Spreafico; and
- Lecture "Recent changes of runoff and sediment loads of the Yangtze River" by Prof. LIU Cheng.



Keynote lecture by Prof. Des Walling

### UNESCO-IOS' visit to IRTCES

On June 28, 2011, Ms. Barbara Torggler, Principal Evaluation Specialist of the Evaluation Section of UNESCO's Internal Oversight Service (IOS) and Ms. Ekaterina Sediakina, Associate Evaluation Specialist of the IOS, visited the International Research and Training Center on Erosion and Sedimentation (IRTCES) under the auspices of UNESCO. Prof. Ning Duihu, Deputy Director of IRTCES, and his colleagues met with guests and showed guests their offices, office facilities, and database server room. In the meeting, Prof. Liu Cheng, Deputy Chief of IRTCES' Research and Training Division, made a presentation introducing IRTCES, its activities and its role on acting as ISI (International Sediment Initiative) Technical Secretariat. IRTCES participants including former Deputy Director Prof. Tan Ying, Deputy Secretary General Ms. Tong Yuling, Division Chief Prof. Chen Jianguo and Ms. Shi Hongling answered two evaluation specialists' questions and have a good discussion.

The visit is part of an overall (global) review of UNESCO's Category II Centres that will produce a few



general conclusions / recommendations regarding UNESCO's work with Category II Centres.



### ISI Steering Committee member Prof. Zhao-Yin Wang receives ASCE's Hans Albert Einstein Award

Professor Zhao-Yin Wang, who is a Professor of Tsinghua University, Beijing, China and serves as the UNESCO-IHP-ISI (International Sediment Initiative) Steering Committee member, is the 2011 recipient of the American Society of Civil Engineers' Hans Albert Einstein Award. It is the most prestigious award in the field of erosion control, sedimentation and/or waterway development. Prof. Wang accepted the award during the World Environmental and Water Resources Congress in Palm Springs the last week of May.

His award citation reads: "For his unique contributions to understanding of hyperconcentrated flows, debris flows, watershed vegetation-erosion dynamics, stream ecology and restorations, and integrated river basin management." In selecting Prof. Wang for this award the committee particularly noted his significant advances that are currently being used to address complex environmental erosion and sedimentation problems in China and all over the world.

The Hans Albert Einstein Award is given to a member who has made a significant contribution to the engineering profession in the area of erosion control, sedimentation and/or waterway development either in teaching, research, planning, design or management.



### U.S. NHI President Mr. G. A. Thomas Visits IRTCES

Mr. Gregory A. Thomas, President of U.S. Natural Heritage Institute (NHI) visited the International Research

and Training Center on Erosion and Sedimentation (IRTCES) on March 29, 2011, accompanied by Ms. Yongxuan Gao the NHI water resources engineer and Ms. LV Tong of the Nature Conservancy (China). IRTCES Deputy Director Mr. NING Duihu and his colleagues met with the guests, and both sides had a talk for cooperation.

Mr. Ning welcomed Mr. Thomas' visit, and Mr. LIU Cheng, Deputy Division Chief of IRTCES, made a presentation introducing IRTCES and its activities. Mr. Thomas briefed NHI as well as its proposal on harvesting the global state of knowledge on managing sediment passage through reservoirs. Both sides reached a preliminary cooperation intention on the proposal.



### International Advanced Training Workshop on Water and Soil Conservation will be held in Beijing, China on Sept. 12-20, 2011

The International Advance Training Workshop on Water and Soil Conservation will be a major activity of the International Sediment Initiative (ISI) of UNESCO for 2010-2011. It should meet one of the objectives of ISI on "Education and capacity building for sustainable sediment management". The workshop has been designed to fulfill the demands of engineers, scientists, managers, stakeholders and decision-makers in various countries. Through lectures, discussions, exchanges and a one-day field study, the participants will have the opportunity to improve their professional skills in water and soil conservation theory and practical knowledge, acquire the latest concepts, techniques and information, and establish linkage among participants.

The training course will be arranged in lectures, demonstration and seminars with following topics:

- Situation of global soil erosion;
- Soil erosion types and their characteristics;
- Soil erosion mechanism and its estimation ;
- Main measures of water and soil conservation;
- Check dam for water and soil conservation in Loess Plateau in China;
- River sediment management and River Ecology Restoration
- Field study on small-watershed integrated management in the suburb area of Beijing.
- Seminar

For more information, please go to the online announcement available at:

[http://www.irtces.org/isi/WebNews\\_View-en2.asp?WebNewsID=654](http://www.irtces.org/isi/WebNews_View-en2.asp?WebNewsID=654)



## The Fourth Yangtze Forum held in Nanjing (China)



On 18-19 April 2011, the fourth Yangtze Forum was held in Nanjing - the capital city of Jiangsu Province. The forum is sponsored by Jiangsu Provincial Government and Changjiang Water Resources Commission of the Ministry of Water Resources. Representatives from relevant ministries and provinces along the Yangtze River namely, Qinghai, Tibet, Yunnan, Chongqing, Hubei, Hunan, Jiangxi, Anhui, Jiangsu and Shanghai, as well as international organizations and experts from different countries took part in the event. Nanjing Declaration was passed during the forum. (Source: MWR, <http://www.mwr.gov.cn/>)

## Gushing torrents discharged from Xiaolangdi Reservoir on Yellow River



Torrent gushes from the Xiaolangdi Reservoir in Jiyuan, central China's Henan Province, June 21, 2011. The Yellow River Flood Control and Drought Relief Headquarters launched on Sunday a 20-day operation to discharge water from three reservoirs, namely Wanjiashai, Sanmenxia and Xiaolangdi, in a bid to clear up the sediment in the river. (Xinhua/Miao Qiunao)

## No-till Farming Prevents Erosion, Study Shows (USA)

Wheat farmers in eastern Oregon and Washington who use no-till production systems can substantially stem soil erosion and enhance efforts to protect water quality, according to research performed by USDA scientists.

USDA Agricultural Research Service hydrologist John Williams led a study that compared runoff, soil erosion and crop yields in a conventional, intensively tilled winter wheat-fallow system and a no-till four-year cropping rotation system.

Williams and his colleagues at the ARS Columbia Plateau Conservation Research Center in Pendleton, Ore., set up research plots in two small neighboring ephemeral drainage areas in the Wildhorse Creek Watershed in northeast Oregon. For three years, they measured runoff and sediment loads at the mouth of each drainage channel in the study area after almost every rainfall.

The scientists found that 13 rainfalls generated erosion from conventionally tilled fields, but only three rainfalls resulted in erosion from no-till fields. In addition, they noted that 70 percent more runoff and 52 times more eroded material escaped from the conventionally tilled fields than from the no-till fields.

No-till production left the soil surface intact and protected pore space beneath the soil surface, which allowed more water to infiltrate into the subsoil. In addition, there was no significant yield difference between the no-till and conventional-till production, but direct seeding in no-till production saved fuel and time.

Other research on no-till production and soil erosion had been conducted in small experimental plots, but this work provides much-needed information for farmers in eastern Oregon and Washington on how no-till management can reduce soil erosion across entire production fields.

Results from this work were recently published in the *Journal of Soil and Water Conservation*.

(Source: Hobby Farms, <http://www.hobbyfarms.com/>)

## Sediment reduction plan unveiled (USA)

The south metro Mississippi River is receiving nearly 1 million tons of sediment from other rivers annually, but a new cleanup plan has targeted the pollution sources and is calling for significant reductions.

The Minnesota Pollution Control Agency released the first draft of a TMDL — total maximum daily load — Wednesday that recommends the Minnesota River - the primary source of pollution to the south metro Mississippi reduce its sediment flow by up to 60 percent.

Other reductions stated in the TMDL include 50 percent from the Cannon River, 25 percent from urban runoff, 20 percent from the Upper Mississippi River and 20 percent from smaller rivers and streams in Minnesota and Wisconsin that flow directly into the Mississippi River.

The plan's goal is to reduce the amount of total suspended solids in this section of the Mississippi River.

The Mississippi River from U.S. Lock & Dam No. 1 in Minneapolis past Red Wing to the head of Lake Pepin is designated as the south metro stretch.

Too many suspended particles create cloudiness and unclear water. This prevents sunlight from penetrating the surface of the river and growing rooted aquatic vegetation for fish and wildlife to feed on.

But since the TMDL primarily focuses on reducing total suspended solids, there's still a concern of fixing other problems — such the levels of nitrogen and phosphorus — to improve the overall water quality.

Implementing TMDL will involve controlling ravine erosion, managing water levels and building islands.

A final report must received Environmental Protection Agency approval before the many years of implementation can get under way.



Successful implementation of the TMDL will not only benefit the south metro Mississippi, officials said, but also Lake Pepin, which the Mississippi - and its sediment - flows into. If high levels of sediment continued to flow into Lake Pepin, experts say the head of the lake would fill in with sediment within this century, and the entire lake within 300 years.

The Mississippi River flowing past Red Wing suffers from high turbidity, according to the Minnesota Pollution Control Agency. That means the river has too much sediment, or soil mixed with the water, to meet the state standard for aquatic life. The MPCA has launched a plan to reduce that sediment. (By: Regan Carstensen, The Republican Eagle )

(Source: The Republican Eagle, <http://www.republican-eagle.com/>)

### More News in ISI Website

- Contents of IJSR (Vol. 26, No.2, 2011)
- UNESCO-IOS' visit to IRTCES
- [PIC] Gushing torrents discharged from Xiaolangdi Reservoir on Yellow River
- Power plants will double output of Three Gorges Dam (China)
- Stiff sediments made 2004 Sumatra earthquake deadliest in history
- Landslide kills seven in E China
- Man-made causes ruled out in deadly central China landslide
- China's environmental situation grave, major rivers slightly polluted: ministry
- Second Phase of Historic Hudson River Cleanup Underway (USA)
- Environmental groups warn of `retrogressive erosion` (ROK)
- ISI Steering Committee member Prof. Zhao-Yin Wang receives ASCE's Hans Albert Einstein Award
- Sediment from Farms Threatens Scenic Lake Pepin (USA)
- Satellite images from USGS and NASA data show large amounts of sediment throughout coastal Louisiana as a result of flooding on the Mississippi River
- China's two largest fresh water lakes shrink dramatically amid persistent drought
- Vienna Declaration (International Conference on the Status and Future of the World's Large Rivers)
- Chinese firm wins bid on Cameroon hydropower project
- Short Course "Modeling of River Migration at Multiple Scales: A GIS-based toolbox for river restoration" to be organized on Sept. 3-5, 2011
- [PIC] Soil forest landscape at foot of Himalaya, SW China
- Researchers study methods to use river sediment to repair the coast (USA)
- Yangtze River diverted to ease drought in central China
- WAPDA signs agreement for management of Tarbela sediments with cost of \$ 3m (Pakistan)
- Minutes of ISI Steering Committee Core member meeting (Vienna, April 15, 2011)
- More than 20 buried in quarry landslide in south China
- 17 killed, 2 missing in landslide in West Java, Indonesia
- Philippines conducts geohazard assessment for 97 coastal areas
- Sediment reduction plan unveiled (USA)
- NASA MODIS Image of the Day: May 8, 2011 - Sediment off the coast of Washington
- Erosion project shows results (India)
- Minister Chen Lei presented at the high-level Roundtable Meeting on Strategy of Coping with Extreme Weather in China
- Free download: TomSed - a new bedload transport model for steep gradients
- The Fourth Yangtze Forum held in Nanjing (China)
- Vice Minister Hu Siyi presented the China-Europe Water Platform Conference (China)
- Lower Mekong countries take prior consultation on Xayaburi project to ministerial level(MRC)
- China approves plan to improve river control, mountain flood prevention
- Minister Chen Lei signed MoU with Brazilian counterpart (China)
- Minister Chen Lei met with Deputy Commanding General of U.S. Army Corps of Engineers (China)
- ISI Steering Committee Core Member Meeting Held in Vienna on April 15, 2011
- International Conference on the Status and Future of the World's Large Rivers Held in Vienna on April 11-15, 2011
- Sediment Hits Niobrara Hard (USA)
- No-till Farming Prevents Erosion, Study Shows (USA)
- NASA MODIS Image of the Day: April 6, 2011 - Sediment in the Bay of Biscay
- Upper Hudson River cleanup to Resume in May (USA)
- Xinjiang begins construction of 18 water conservation projects (China)
- Stanford begins comprehensive study of Searsville Dam (USA)
- U.S. NHI President Mr. G. A. Thomas Visits IRTCES
- Memorandum Signed for China-Germany Project on Small Hydropower (China)
- Gov. Walker: Successfully cleaning up the Fox River (USA)

More .....

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



# CONFERENCE REPORT

## Vienna Declaration (International Conference on the Status and Future of the World's Large Rivers)

The Vienna Declaration has been discussed and in principle adopted by the participants in a Discussion Forum during the World's Large Rivers Conference on Wednesday, 13th of April 2011.

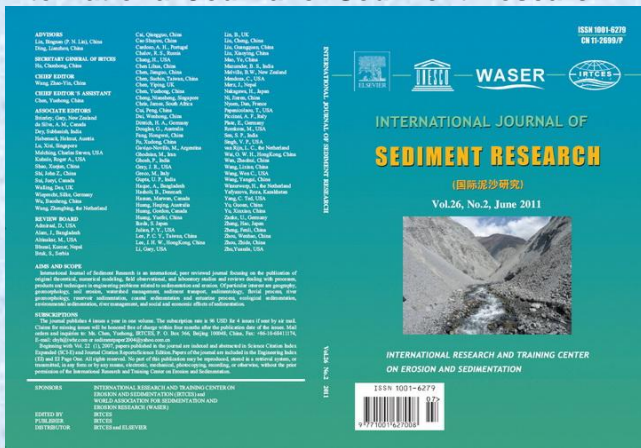
The comments of the participants have been collected and have been integrated in the final version.

This final version will be distributed to all of the participants and organizations (UNESCO, IAHR, IAHS, WASER,...) for further dissemination.

(The Vienna Declaration is attached in the last page.)

# PUBLICATION

## Papers Published in Issue 2 Volume 26, 2011, International Journal of Sediment Research



Volume 26, Number 2

March 2011

Hossein AFZALIMEHR, Jacques GALLICHAND, Jueyi SUI, and Ehsan BAGHERI

### Technical Notes

Optimizing the design of in situ sediment oxygen demand measurement chambers

HE Yun and LIU Cheng

Phosphorus forms and distribution in the sediments of Poyang Lake, China

XIANG Su-lin and ZHOU Wen-bin

Variations in total organic carbon and grain size distribution in ephemeral river sediments in western India

J. DINAKARAN and N. S. R. KRISHNAYYA

### Discussions

Discussion on "Hydraulic parameters in channels with wall vegetation and gravel bed" by Hossein Afzalimehr, Jueyi Sui and Razieh Moghbel [International Journal of Sediment Research, 25 (2010) 81-90]

O. YAGCI and U. TURKER

### Technical Papers

Influence of large woody debris on sediment scour at bridge piers

Stefano PAGLIARA and Iacopo CARNACINA

An exploratory study on the use of enzyme activities as sediment tracers: biochemical fingerprints?

Kazem NOSRATI, Gerard GOVERS, Hassan AHMADI, Forood SHARIFI, Mohammad Ali AMOOZEGAR, Roel MERCKX, and Matthias VANMAERCKE

Correlation assessment and monitoring of the potential pollutants in the surface sediments of Pyeongchang River, Korea

Md. Imran KABIR, Hosik LEE, Geonha KIM, and Taesung JUN

Real-time prediction of the peak suspended sediment concentration and sediment yield of the Lao-Nung River during storms

Pi-Chih HSU, Ching-Nuo CHEN, and Chang-Tai TASI

Seasonal variation and bioavailability of inorganic phosphorus in soils of Yeyahu Wetland in Beijing, China

ZHANG Jing, LI Min, LIU Shuang, LIU Yujin, ZHANG Liqiang, CAO Qi, and SUN Dezhi

Flash flood sediment transport in a steep sand-bed ephemeral stream

Paolo BILLI

Field investigation on friction factor in mountainous cobble-bed and boulder-bed rivers

Cover Photo: Grain erosion is the main source of solid materials for debris flows in the Jiangjia Ravine in Yunnan, China

### Publications in ISI Information System

- Publications from UNESCO's International Hydrological Programme (IHP)
- Transboundary Aquifers in Asia: a Preliminary Inventory and Assessment (UNESCO)
- Featured Publication: The Impact of Global Change on Water Resources: The Response of UNESCO's International Hydrological Programme (UNESCO)
- Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region (USDA)
- UNESCO Water Chair releases book Risk Analysis of Water Pollution
- UNESCO-IHP releases new brochure on Urban Water Series
- Reservoir Sedimentation in Brantas River Basin, Indonesia

More .....

<http://www.irtces.org/isi/info.asp>



## COMING EVENTS

### 4th International Conference on Estuaries and Coasts (Vietnam, Oct.8-11, 2012)

**Date:** 8-11 October 2012

**Venue :** T45 Conference Hall, Water Resources University, Hanoi, Vietnam

**Summary:** The 4th International Conference on Estuaries and Coasts (ICEC-2012) will be held in Hanoi, Vietnam, co-organized by Water Resources University and the International Research and Training Center on Erosion and Sedimentation (IRTCES). The ICEC2012 aims at providing a forum for discussion and exchange among researchers and scientists in the field of estuary and coast.

**Organizer:** Water Resources University, Vietnam

**Sponsors:** International Research and Training Centre on Erosion and Sedimentation (IRTCES)

**Co-Sponsors:** UNESCO, IAHR, IAHS, WASER, and other institutes and organizations to be invited

**Secretariat:** Water Resources University, Vietnam

**Permanent Secretariat:** IRTCES

**Conference Themes:** Vision and Imagination – Water in an Era of Change, with sub-themes

Climate Change

Water Resources and Hydrology

Environmental and Ecological Hydraulics

Coastal and Estuarine Hydrodynamics

Estuarine and Coastal Management

Design, Maintenance and Management of Waterways

in Estuaries and Harbors

Research Technologies for Estuarine Engineering

Coastal Structures

Coastal Hazard

**URL:** <http://www.icec2012.edu.vn/>

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### ISI International Advanced Training Workshop on Water and Soil Conservation

**From** 2011-09-12 to 2011-09-20

**Venue:** Beijing, China

**Summary:** The international advanced training workshop has been designed with a view to fulfilling the demands of engineers, scientists, managers, stakeholders and decision-makers in various countries. Through lectures, discussions, exchanges and a one-day field study, the participants will be able to improve their professional skills in water and soil conservation theory and practical knowledge, acquire the latest concepts, techniques and information, and establish linkage among participants. This training workshop will be a major activity of the International Sediment Initiative (ISI) of UNESCO for 2010-2011. It is expected to meet one of objectives of ISI on education and capacity building for sustainable sediment management.

**Organizers:** International Sediment Initiative (ISI) of UNESCO; International Research and Training Centre on Erosion and Sedimentation (IRTCES); Ministry of Water Resources, P.R. China

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**URL:**

[http://www.irtces.org/isi/isi\\_document/2011/isi\\_training\\_workshop\\_irtces\\_2011.pdf](http://www.irtces.org/isi/isi_document/2011/isi_training_workshop_irtces_2011.pdf)

### RCEM2011 - The 7th IAHR Symposium on River, Coastal and Estuarine Morphodynamics (Beijing, Sept. 6-8, 2011)

**Date:** Sept. 6-8, 2011

**Venue :** Beijing, China

**Summary:** The IAHR Subcommittee on River, Coastal and Estuarine Morphological processes (RCEM) held the first 6 of this successful series of conferences in Genova, Italy; Obihiro, Hokkaido, Japan; Barcelona, Spain; UIUC, Illinois, USA; Enschede, the Netherlands; and Santa Fe City, Argentina. The language of the conference is English. The IAHR Symposia on River, Coastal and Estuarine Morphodynamics provide a forum for the scientists and river engineers to share ideas and research results on river, coastal and estuarine morphodynamics. Tsinghua University will host the 7th IAHR Symposium on River, coastal and estuarine morphodynamics in the year 2011. The central theme of this conference is "Impacts of Hydro-Projects on River, Coastal and Estuarine Processes".

**Organizer:** Tsinghua University, Beijing, China

**Themes:** The scope of the conference will be broad, covering all issues related to river, coastal and estuarine morphological processes. Specific themes include, but are not limited to:

Processes

Sediment yield and sediment transport

Incised rivers

Alluvial rivers

Deltas, estuaries, bays

Responses of river and estuaries to floods and storms

Environmental and ecological aspects of morphological processes

Field investigations, experiments, and simulations

Impacts of catastrophic events on morphological processes

Landslide and debris flow

Turbulent flow in rivers and coastal areas

Modeling of catchment and fluvial processes

Man-nature interaction

Impacts of large hydraulic structures on catchment, fluvial and coastal processes

Disturbance of stream-lake systems and its environmental and ecological impacts

Sedimentation processes in large reservoirs

River engineering and restoration, habitat protection, environmental flows

Focuses

River confluences, tributaries and distributaries

Bedforms, bars and braiding

River bends and meandering, scouring and bank erosion

Turbidity currents and submarine morphodynamics

Tidal flats, costal and shelf bedforms

**URL:** <http://sklhse.tsinghua.edu.cn/rcem2011/rcem2011.html/>

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### Short Course "Modeling of River Migration at Multiple Scales: A GIS-based toolbox for river restoration" to be organized on Sept. 3-5, 2011

**Date:** Sept. 3-5, 2011

**Venue :** Beijing, China

**Summary:** Pre-conference Short Course "Modeling of River Migration at Multiple Scales: A GIS-based toolbox for river restoration" to be organized on Sept. 3-5, 2011 (RCM2011 - The 7th IAHR Symposium on River, Coastal and Estuarine Morphodynamics). This intensive course will be taught over 3 days, comprising six one-hour/day lectures on theory and modeling aspects of river meandering and streambank erosion across multiple spatial and temporal scales. Additionally, one-hour lectures of application cases related to the short course will be presented at the end of the first and second day. The Course is intended for students, professionals, and scientists.

**URL:** [http://www.irtces.org/isi/WebNews\\_View-en2.asp?WebNewsID=706](http://www.irtces.org/isi/WebNews_View-en2.asp?WebNewsID=706)

Registration Fee: 100 USD

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### APAC2011 - The 6th International Conference on Asian and Pacific Coasts (Hong Kong, Dec. 14-16, 2011)

**Date:** Dec. 14-16, 2011

**Venue :** Hong Kong, China

**Summary:** Hong Kong, widely celebrated as Asia's world city, is increasingly integrated with the Pearl River Delta Region of China. Sustainability of Hong Kong depends on coastal developments that require engineering solutions. The issues of concern include coastal reclamation, offshore wind farms, coastal water quality, Hong Kong-Zhuhai-Macau Bridge, and other coastal infrastructure projects. This international conference hosted by The University of Hong Kong will be a platform for engineers and researchers to keep abreast of the current scientific and technological advancements in coastal, port, ocean engineering, and other related fields. The University of Hong Kong is organising the 6th International Conference on Asian and Pacific Coasts in December 2011, which will be a platform for engineers and researchers to keep abreast of the current scientific and technological advancements in coastal, port, ocean engineering, and other related fields.

**Organizer:** University of Hong Kong

**Themes:** The scope of the conference will be broad, covering all issues related to coastal, harbour, and ocean engineering. Specific themes include, but are not limited to:

- Beach erosion and sediment transport
- Climate change and sea level rise
- Coastal infrastructure developments
- Hydrodynamics of offshore structures
- Lowland development and reclamation
- Marine ecology and environments
- Marine and offshore wind energy
- Oil spill and environmental hazards
- Port works (dredging, seawall design, etc.)
- Sea water intrusion
- Tsunami, waves and tides
- Wastewater disposal
- Wetlands

**URL:** <http://www.civil.hku.hk/apac2011/>

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### ISELE - International Symposium on Erosion and Landscape Evolution (Alaska, USA, September 18-21, 2011)

**Date:** Sept 18-21, 2011

**Venue :** Anchorage, Alaska, USA

**Summary:** Soil erosion caused by water and/or wind is a continuing problem throughout the world that threatens the capacity of the Earth to produce food, fiber, and renewable sources of energy for an ever-increasing population. Additionally, eroded sediment is a major air and water pollutant, causing many detrimental off-site impacts. Erosion by wind and/or water processes continually impacts the evolution of landscapes. With global climate change, erosion and landscape evolution may be accelerated, particularly in regions such as Alaska, where increases in air temperature of just a few degrees may shift large landscape areas from frozen to thawing and more erodible conditions. This symposium provides a forum for participants to discuss the current status and the future of soil erosion research. This international conference is hosted by the American Society of Agricultural and Biological Engineers (ASABE) and held in conjunction with the Association of Environmental and Engineering Geologists (AEG) annual meeting. Submission deadline for paper abstracts is December 31, 2010.

**Organizer:** American Society of Agricultural and Biological Engineers (ASABE)

**Themes:** The scope of the conference will be broad, covering all issues related to water and aeolian soil erosion, and subsequent landscape evolution. Specific themes include, but are not limited to:

- Erosion Processes (Detachment, Transport, Deposition)
- Prevention and Control of Upland and In-Stream Erosion
- Highly Disturbed, Urban Areas, and Arid Lands
- Erosion Processes in Wetlands, Coastal, and Glacial Areas
- Aeolian Erosion and Fugitive Dust Emission
- Impacts of Global Change on Erosion Processes and Landscape Evolution

**URL:** <http://twosweet.bse.vt.edu/ISELE2011/index.html>

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## 5th International Conference on Flood Management (Japan, Sept.27-29, 2011)

**Date:** 27-29 September 2011

**Venue:** . Tsukuba, Japan

**Summary:** International Conference on Flood Management (ICFM) is the only recurring international conference wholly focused on flood related issues. It is designed to bring together practitioners and researchers alike, including engineers, planners, health specialists, disaster managers, decision makers, and policy makers engaged in various aspects of floodplain management. It provides a unique opportunity for these various specialists to come together to exchange ideas and experiences.

The 5th International Conference on Flood Management (ICFM5) marks the continued advancement of flood management practices and policies around the world. The name change from "Defence" as used in the previous four events to "Management" is reflective of the more integrative approaches to flood management that nations are increasingly employing. The first International Symposium on Flood Defence, held in Kassel, Germany in 2000, emphasized flood defence measures with each successive event (Beijing 2002, Nijmegen 2005 and Toronto 2008) evolving towards more integrative approaches, including risk, vulnerability and capacity building.

The ICFM5 theme is "Floods: From Risk to Opportunity", reflective of the continued trend towards a broader understanding of how we collectively make use of the opportunities provided by floods and flooding, cope with risks posed by them and plan for and respond to flood events.

**Organizer:** International Centre for Water Hazard and Risk Management (ICHARM)

**URL:** <http://www.ifi-home.info/icfm-icharm/icfm5.html>

**Contacts:**

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### More Coming Events in ISI Website

- 4th International Conference on Estuaries and Coasts (Vietnam, Oct.8-11, 2012)
- APAC2011 - The 6th International Conference on Asian and Pacific Coasts (Hong Kong, Dec. 14-16, 2011)
- 5th International Conference on Flood Management (Japan, Sept.27-29, 2011)
- ISI International Advanced Training Workshop on

Water and Soil Conservation

- ISELE - International Symposium on Erosion and Landscape Evolution (Alaska, USA, September 18-21, 2011)
- RCEM2011 - The 7th IAHR Symposium on River, Coastal and Estuarine Morphodynamics (Beijing, Sept. 6-8, 2011)
- Short Course "Modeling of River Migration at Multiple Scales: A GIS-based toolbox for river restoration" to be organized on Sept. 3-5, 2011

More .....

[\(http://www.irtces.org/isi/\)](http://www.irtces.org/isi/)

### Newsletter Layout and Production:

ISI Technical Secretariat

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# VIENNA DECLARATION

## ON THE STATUS AND FUTURE OF THE WORLD'S LARGE RIVERS

Vienna, 13<sup>th</sup> of April, 2011

### PREAMBLE

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Rivers provide mankind with key benefits, such as water supply, food, hydropower, navigation, irrigation, ecosystem services and recreation. They are fundamental to life and frequently possess major cultural significance. However, they are currently threatened by unsustainable “overuse”, increasing human pressure on their catchments and problems of increased floods and droughts driven by climate change, leading to changes in morphology, increased pollution, degradation of aquatic habitats, extinction of fish species etc. All these changes impact negatively on the many benefits of rivers to mankind and their continuing contribution to human needs.

To provide a scientific forum to discuss these benefits and threats, the first International Conference on the Status and Future of the World's Large Rivers (WLRs) was held in Vienna, Austria, from the 11<sup>th</sup> to the 14<sup>th</sup> of April 2011, supported by UNESCO, IAHR, IAHS, WASER and IAG. Over 450 conference participants, coming from 73 nations and representing all continents, large rivers and relevant thematic fields, contributed to the success of the event.

The following declaration was debated and adopted by the participants during the conference.

### DECLARATION

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**The participants of the *International Conference on the Status and Future of the World's Large Rivers* declare the following:**

#### Current Challenges

- The pressures and impacts on the WLRs, including their basins and tributaries, have increased greatly in recent years. As a consequence of their exploitation to meet human needs and the impact of global change, WLRs are severely endangered, and there is an urgent need for action.
- Large rivers are particularly exposed to the impacts of multiple use, often with conflicting aims, leading, for example, to disruption of the continuum of water and sediment transfer from source to mouth.
- At the global scale, there is currently no holistic assessment of the present status of WLRs, the conflicting demands on such rivers, their likely future response to climate change and other anthropogenic impacts and the potential for restoration.
- There is no existing international regulatory mechanism for protecting the few remaining near natural WLRs.

#### Future Needs

- Analysis of the current status, conflicting demands and the future development of WLRs, including the impact of medium and long-term climate change.
- Formation of a global forum to facilitate wide-ranging informed discussion of key issues related to research on, and management of, large rivers.
- Promoting the preservation of the remaining near natural WLRs (“red list”) and the sustainable management or rehabilitation of impacted WLRs, including knowledge transfer to decision makers and the population.





## Integrated Management of the World's Large Rivers and their basins

- Maintain or restore/rehabilitate (in a dynamic, spatial and temporal context) WLR basic functions, including biodiversity and ecosystem services, recognising the individuality of rivers.
- Avoid single-aim infrastructure development projects and strategies.
- Aim for win-win solutions combining ecological functionality (based on EIA) and economic use.
- Implement IWRM in a long-term context, taking account of the potential impact of climate change on WLRs.
- Integrate use, protection and restoration of WLRs (including upstream-downstream interactions).
- Sustain or improve river type-specific hydrological and hydraulic conditions.
- Preserve or restore the continuum of biota and sediment and sustain or improve sediment transport and fluvial morphodynamics, to achieve (close to) natural conditions.
- Establish and fulfil water quality objectives, recognising the individuality and specific conditions of each river.
- Collect and freely exchange data for transboundary rivers, based on common standards and accuracy.
- Assess future trends of river hydro-morpho-ecodynamics; develop and test mitigation strategies.

### Action plan

#### Creation of a global overview of the status and future of WLRs

Based on the contributions to the conference, a UNESCO-led and internationally-funded (e.g. World Bank) medium-term project, undertaken in collaboration with UNEP, UNDP, FAO, WHO, ADB, etc., should assemble and analyse existing data (free access) and knowledge on the status and future of WLRs, including evaluation of potential future infrastructure projects, their impact on WLRs and possible mitigation strategies.

#### Closing of knowledge gaps, knowledge transfer and a Global Observatory of WLRs

In a concerted action, the research required to close knowledge gaps relating to WLRs should be identified and promoted. Particular attention should be given to knowledge transfer to next generation scientists, stakeholders, decision makers, children (education) and the general public. A global observatory should be formed to document changes (including climate change effects) occurring in WLRs.

#### Collaborative International Action Plan to focus on WLR research and management

In a joint memorandum, international scientific bodies and associations (e.g. UNESCO, IAHR, IAHS, WASER, IAG, etc.) should formulate an action plan on WLR research and management as well as sponsor future WLR conferences.

#### World River Forum, World Rivers Day and WLR Commission Meetings

A World River Forum should be established to bring together scientists, stakeholders and decision makers, in order to promote and improve integrated management of WLRs. The UN World Rivers Day should be scientifically supported. The WLR Commissions (responsible for sustainable river management) should meet regularly to exchange experiences, define common standards on integrated management and debate future needs.

#### Future Conferences on the World's Large Rivers

A Conference on the Status and Future of WLRs should be held every three years, with the aim of expanding and disseminating scientific knowledge relating to WLRs.

## MOVING AHEAD

In order to improve the situation and reduce the threats to the World's Large Rivers the proposed actions should be implemented in the years 2011 to 2014, so that during the next WLR conference, to be held in Manaus, Amazonas, Brazil in 2014, ongoing activities can be evaluated and further initiatives planned.

**The Vienna Declaration recommends** that a collaborative and multidisciplinary international initiative is required to create the basis for a holistic, global scientific assessment of the status of the World's Large Rivers and to promote urgently needed improved, integrated and sustainable management of WLRs and their surrounding landscapes and basins.

