



Hydrological changes and management from headwater to the ocean

Kyoto Garden Palace, Kyoto, JAPAN

1 - 3 October 2008

http://www.chikyu.ac.jp/HC_2008



Scope

The vulnerability of water resources due to climate change and human activities is globally increasing. The phenomenon of hydrological change is complicated because of the combinations and interactions between natural climate fluctuation, global warming and human activities including changes in land utilization. The impact areas of hydrological changes are also not only within the basin, but reach to the ocean through coastal water exchanges. This conference aims to integrate the problems from headwater to the ocean which may occur globally in the future because of climate change and increase in population on earth. The conference topics include land-atmosphere interaction, land-ocean interaction, groundwater - surface water interaction, headwater studies under climate changes and human impacts, coastal zone and estuary studies, socio-ecological analyses and monitoring of vulnerable water resource, integrated model and management for sustainable uses of water resources, reconstruction of human impacts on the surface and subsurface environments, and other water issues in regions with vulnerable water resources. The conference will give interdisciplinary knowledge and current awareness on integrated water management under the pressures of climate change and human activities.

Organizers and Co-Sponsors

- * Research Institute for Humanity and Nature (RIHN, Japan)
- * International Association of Hydrological Sciences (IAHS)
- * Global Water System Project (GWSP)
- * International Association for Headwater Control (IAHC)
- * European Observation of Mountain Forests (EOMF)

Organizing Members

- * Liu Changming (CAS, China)
- * Yoshihiro Fukushima (RIHN, Japan)
- * Martin Haigh (Oxford Brooks University, UK)
- * Chen Jianyao (Sun Yat-sen University, China)
- * Toshiharu Kojiri (Kyoto University, Japan)
- * Josef Krecek (Czech Institute for Technology, Czech)
- * Dan Rosbjerg (Technical University of Denmark, Denmark)
- * Hubert H. G. Savenije (Delft University of Technology, The Netherlands)
- * Andreas H. Schumann (Ruhr-University Bochum, Germany)
- * Makoto Taniguchi (RIHN, Japan)

Important Dates

(Japan Standard Time GMT+9:00)

1st circular: Sept. 2006
 2nd circular: May 2007
 Deadline of abstract submission: Nov. 1, 2007
 Notice of acceptance: Dec.15, 2007
 Deadline of full paper submission: Feb. 15, 2008
 Deadline of early registration: June 1, 2008
 Deadline of registration on web site: Aug. 31, 2008
 Deadline of hotel and tour reservations through official web site: Sept. 17, 2008

Science Program

Session 1: Land-atmosphere interaction

Human activities have caused significant changes in the land-cover conditions on the Earth in recent several decades and have possibly induced inevitable impacts on the Earth's climate. The land-surface processes are one of the critical issues for prediction of climate change, maintenance of ecological systems, and management of water resources. Measurement techniques have progressed abruptly in recent decades and meteorological databases have been constructed by various research communities. This session especially focuses on land-atmosphere interaction to enhance our understanding of the issue in relation to climate change and human activities. Research issues on energy, water, and mass transfers at various land surfaces and meteorological and climatic topics are welcome.

Session Conveners

- * Helen Cleugh (CSIRO, Atmospheric Research, Australia)
- * Tetsuya Hiyama (Nagoya University, Japan)
- * Atsushi Higuchi (Chiba University, Japan)
- * Takahashi Atsuhiko (RIHN, Japan)

Session 2: Headwater environment: impacts of climate change and human intervention

IAHC topics The 7th International Conference on Headwater Control

Headwater areas are generally characterized by a high potential of recharge of both surface- and ground-water resources, but also by conflicts in the exploitation of natural resources (water, timber, minerals or wildlife), tourism and leisure industries, and nature protection (frequently, these resources remain among the great natural reserves of a nation). Many headwater regions are in mountain steep-lands, and are frequently source areas for natural hazards. However, most headwater areas are the dominant features of plains and plateaus. Headwater environment often consists of fragile ecosystems being in a confrontation with the global climate change and human interventions.

Session Conveners

- * Josef Krecek (Czech technical University, Czech republic)
- * Lorenzo Marchi (CNR IRPI, Padova, Italy)
- * Andreas H. Schumann (Ruhr-University Bochum, Germany)
- * Yoshihiro Fukushima (RIHN, Japan)
- * Masanori Katsuyama (RIHN, Japan)

Session 3: Strategic planning and environmental assessments of activities in headwater areas

IAHC topics The 7th International Conference on Headwater Control

The management of headwater areas demands their full integration in environmental management plans. Towards this end, a new and comprehensive inventory of headwater watersheds is urgently required. The aim of management should be to maximize the benefits of these wetlands to their stakeholders. There remains a need to assess the role of headwaters in land use systems, especially farming, forestry, grazing, water resource management, tourism, and nature conservation. The effective management of headwaters in the frame of integrated

watershed planning also demands some assessment of the role of key components and more effective participatory processes. Are the EIA (Environmental Impact Assessment) and SEA (Strategic Environmental Assessment) procedures effective tools in headwater control?

Session Conveners

- * Einar Beheim (NVE, Oslo, Norway)
- * Bruce Van Haveren (US-EPA, Denver, USA)
- * Pier Carlo Zingari (EOMF, Chambery, France)
- * Takahiro Endo (RIHN, Japan)

Session 4: Environmental education for sustainable development: the role of mountain and headwater landscapes

IAHC topics The 7th International Conference on Headwater Control

Better quality of headwaters starts with environmental education. Conflicts in headwater environments address all the issues highlighted by "United Nations Decade of Education for Sustainable Development" (2005-2014): water, climate change, biodiversity, and disaster prevention. Higher education prepares the future decision-makers. Therefore, the more effective system on higher education is a key to better knowledge of the society. Better communication between researchers, students, communities and policy makers can increase the quality of headwater environment. The interdisciplinary perspectives in the watershed management should be progressed by more effective cooperation between social science, Earth sciences and engineering sciences.

Session Conveners

- * Martin J. Haigh (Oxford Brookes University, UK)
- * Andrej Hocevar (University of Ljubljana, Slovenia)
- * Marie Studer (Earthwatch Organization, USA)

Session 5: Hydrological models in support of integrated water resources management

Integrated water resources management aims at sustainable uses of water, land, and related resources. Hydrological models can help resource managers to analyse and quantify effects of spatial and temporal changes in the availability and quality of freshwater resources. The integration of global change aspects into hydrological models and the use of different modeling techniques can also provide decision makers with scenarios of potential anthropogenic interventions (land-use, reservoir operations, drainage and irrigation) and their impacts on fragile freshwater resources. The aim of this session is to address long-term changes of surface water and groundwater quantity and quality from headwater areas to the ocean. The session will focus on hydrological modeling and the integration of global change aspects (including climate change) from both the natural and social sciences using different modeling techniques.

Session Conveners

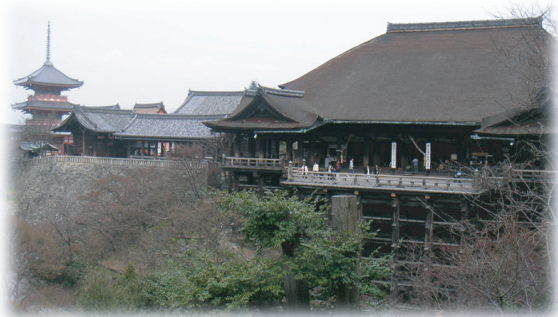
- * Vijay P. Singh (Texas A&M University, USA)
- * Marcel Endejan (GWSP Deputy Executive Officer)
- * Ma Xieyao (Frontier Research System for Global Change, Japan)
- * Yoshinobu Sato (RIHN, Japan)

Session 6: Groundwater-surface water interaction

Understanding the mechanisms of water movement and transport of dissolved materials between surface water and groundwater is essential to improve the management of surface and groundwater resources and to protect the ecosystems from deterioration. Although surface water and groundwater have been considered separately for a long time, we now understand the fact that water cycle in terms of water quantity and quality is critical for the maintenance of the ecological systems of both rivers and aquifers. For example, the combined use of multiple tracers of both radioactive isotopes and stable isotopes, and other geochemical components will facilitate understanding of these hydrological processes. This session will bring together scientists to advance integrated analysis of groundwater-surface water systems. Physical, chemical, and biological processes, together with mathematical approaches focusing on groundwater-surface water interactions, and impacts due to climate changes and human activities/responses (i.e., urbanization, dam construction, water transfer projects, irrigation, and landfill) are welcome.

Session Conveners

- * Jianyao Chen (Sun Yat-sen University, China)
- * Tsutomu Yamanaka (University of Tsukuba, Japan)
- * Takeo Ohnishi (RIHN, Japan)



Kiyomizu Shrine, KYOTO

Session 7: Remote sensing for measuring water balance, hydrodynamics and hydrological processes

Remote sensing analyses using satellite and aerial photo images collected in a broad range of spatial and temporal scales allow us to have an overview of the hydrodynamics, water balance and environmental changes in watershed and basin scale. For example, recently developed technique using GRACE (Gravity Recovery and Climate Experiment) satellite gives terrestrial water storage and their temporal changes even in the remote areas with less data set. On the other hand, aerial infrared imagery is effectively used to infer submarine groundwater discharge, which occurs with variations in space and time. Intensively collected groundtruth data set related to hydrological processes at local areas would be scaled up to large areas by combining these remote sensing techniques. The multi-disciplinary approaches using visible, near and thermal infrared, microwave and other wavebands as well as GRACE like sensors will be welcomed to better understand hydrodynamics and hydrological processes in watershed.

Session Conveners

- * Pat Yeh (University of California, Irvine, USA.)
- * Yoichi Fukuda (Kyoto University, Japan)
- * Masayuki Matsuoka (Kohchi University, Japan)

Session 8: Interaction between the groundwater resources and ecosystems

Groundwater dependent ecosystems (GDEs) frequently occur in wetlands, terrestrial vegetation, riparian area in arid region, coastal zones, coral reefs and cave ecosystem. Critical damages or more gradual changes in composition and/or ecological function of communities are expected in these areas according to climate change and/or human impacts on hydrological settings. On the other hand, the degradation of vegetation can conversely cause a shift of related hydrological environment including water quality and water mass balance. The approaches for quantifying hydrodynamics in watersheds and submarine groundwater discharge at coastal areas are becoming better established, it would be time to integrate the interactions between ecosystems and groundwater system. This session will invite contribution to the broad examples collected at a variety of groundwater dependent ecosystem, including field observation and model prediction.

Session Conveners

- * Derek Eamus (University of Technology, Sydney, Australia)
- * Nobuhito Ohte (The University of Tokyo)
- * Yu Umezawa (RIHN, Japan)
- * Tomohiro Akiyama (RIHN, Japan)

Session 9: Socio-economic analysis and monitoring of vulnerable water resource

Water is the basic necessity of people and has been the main resource for human activities. Nowadays, intensive socio-economic activities have caused the depletion of water resource, deterioration of water quality, and damaged to water environment in many areas. In order to promote sustainable development, it is necessary to manage human activities efficiently and effectively while satisfying the condition of water resource and its environment. This session will discuss the impacts of human activities on water resource systems and their functions. We welcome wide aspects of interdisciplinary studies in sociology, economics, political science, and ecology, focusing on human activities-water resource interactions.

Session Conveners

- * Felino Lansigan (University of the Philippines, Philippines)
- * Masafumi Morisugi (Meijo University, Japan)
- * Akio Onishi (RIHN, Japan)
- * Karen Jago-on (RIHN, Japan)

Session 10: Reconstruction of human impacts on the surface and subsurface environments during past 100 years

At the cities and surrounding areas, overuse of water resources associated with expanded human activities have caused drastic changes in subsurface environments such as water shortage and land subsidence. To understand the causal relationships on these issues, it is necessary to trace the effects of human activities on the environments accurately at each developing stage of the targeted areas. However, it is hard to collect the data set in the past, which is of the same quality and quantity with present available

information, and to integrate the huge volume of those chronological data. In this session, therefore, we focus on the potential approaches and ideas from various fields to complement the data, which is available only with different resolutions in space and time. For example, access to historical materials such as old documents and maps, measurements of subsurface temperature, and even the well-thought-out interviews with older people can be effective tools to reconstruct the change of environmental conditions like landuse, water use and surface temperature. Methods systematically integrate these data from different fields, including Geographic Information System (GIS) application and other innovative approaches are also welcome.

Session Conveners

- * Tomomasa Taniguchi (Rissho University, Japan)
- * Akinobu Miyakoshi (AIST, Japan)
- * Akio Yamashita (Rakuno Gakuen University, Japan)

Session11: Land-ocean Interaction

Both river discharge and submarine groundwater discharge (SGD) are important pathways to carry chemical components from land to ocean. In the case of river water, however, measurements of SGD and associated chemical fluxes, especially over substantial areas or time periods, are still uncertain due in part to their heterogeneous discharges. Especially shallow tidal flats near the river mouth, SGD including river bed water flow and tidally enhanced recharged seawater flow may result in overestimation of chemical fluxes from land areas to oceans. Furthermore, intensive human activities along the coast, for example, over-pumping of groundwater and bank protection works, may make these processes complicated. In this session, we will discuss on how to practically estimate SGD and the associated chemical fluxes combining the advantages of commonly-used approaches such as seepage meters, piezometers, natural tracers and electrical-resistivity instrumentation, among others. Numerical hydrodynamical and ecological models at coastal areas, which are improved by these new aspects, are also welcomed.

Session Conveners

- * Makoto Taniguchi (RIHN, Japan)
- * William C. Burnett (Florida State University, USA)
- * Tetsuo Yanagi (Kyushu University, Japan)



Autumn colors at Kurama, KYOTO

Publications

As of April 2007, the book entitled "Hydrological changes and managements from headwater to the ocean (vol. 1&2)" is planned to be published by the publisher "Taylor & Francis". These publications will contain peer-reviewed articles from the participants selected in each session.

Preliminary Conference Schedule

This is a tentative schedule and is subject to change

1st October

- 9:00 - Opening Ceremony
- 9:30 - Keynote Lecture 1
- 10:15 - Coffee Break
- 10:30 - Parallel Sessions
- 12:00 - Lunch
- 13:30 - Parallel Sessions
- 15:20 - Coffee Break
- 15:40 - Parallel Sessions
- 18:00 - Reception

2nd October

- 9:00 - Keynote Lecture 2
- 9:45 - Coffee Break
- 10:00 - Parallel Session
- 12:00 - Lunch
- 13:30 - Parallel Sessions
- 15:50 - Coffee Break
- 16:00 - Poster Sessions (~ 18:00)

3rd October

- 9:00 - Keynote Lecture 3
- 10:00 - Parallel Session
- 12:00 - Lunch
- 13:30 - Parallel Sessions
- 15:20 - Coffee Break
- 15:40 - Panel Discussions
- 17:00 - Closing Ceremony

Pre-Registration and Booking

Registration to the conference, abstract submission, booking of accommodation and tours, and payments are conducted through the official web site. On-line registration is highly recommended. Please sign in web site and get your ID in advance of all of these procedures. You will receive a confirmation and receipt of these procedures by e-mail or FAX.

Registration Fee

	Early Bird (On or before June 1, 2008)	Standard (After June 1)
Regular	30,000 JPY (approx. 250 US\$)	35,000 JPY (approx. 290 US\$)
Students	20,000 JPY (approx. 165 US\$)	25,000 JPY (approx. 210 US\$)
Accompanying person	10,000 JPY (approx. 85.0 US\$)	

The fees will automatically change at 0:00 of June 2, 2008 (Japan local time)

- * Regular and Student Registration fee includes:
Proceedings, Reception, Access to all sessions
- * Accompanying person Registration fee includes: Reception
- * There will be no charge if you cancel your registration on or before June 1, 2008. Cancellations done after June 1, 2008 will not be refunded.

Abstract Submission

Participants can submit 2 presentations, however, only one oral presentation will be allowed by conveners due to the limited space and time at the conference. Please follow the instructions on the official web site. Selected abstracts by the session conveners will be recommended to give a oral presentation and to submit a full paper for the proceedings. Please upload your abstract on web site (Word-format file is preferable).

All submitted abstracts should include:

1. Title of Abstract
2. Names of Authors
3. Affiliations of Authors
4. E-mail
5. Text of Abstract (300 to 400 words)
6. 3-6 keywords

- * English only
- * Font : Times New Roman, 12pts
- * Sample of abstract is available on the web site.
- * Select expected session on web site.
- * You can revise, confirm or delete your submission anytime until 18:00 of November 1, 2007.
- * Notice of acceptance of abstracts will be sent out on the 2nd week of December 2007.

Accommodation

Many accommodations with a variation from Japanese-style to European style are available around Kyoto city area. On the official web site, on the other hand, accommodation booking format is prepared on a first-come, first-served basis as follows.

1. Hotel Harvest Kyoto

1 min walk from Maruta-machi Station
Single: 10,000 JPY Twin: 18,000 JPY

2. Hotel Gimmond Kyoto

3 min walk from Karasuma-oike Station
Single: 9,000 JPY Twin: 16,000 JPY

3. Kyoto Garden Palace

1 min walk from Maruta-machi Station
Single: 8,000 JPY Twin: 13,860 JPY

4. Hotel Hokke Club Kyoto

1 min walk from Maruta-machi Station
Single: 7,500 JPY Twin: 14,000 JPY

- * The rates are per room, per night, including service charge and consumption tax. Meals are not included.
- * Please refer the official web site for the details of rooms and cancellation policies.
- * Please revise and/or cancel your reservation by logging-in to your Personal Page. In case of cancellation, your deposit will be refunded after deducting the cancellation fees.

Tours

There are many World Heritage sites in Kyoto and Nara areas. Several selected tours are prepared for the participants and accompanying persons by JTB Corp. as follows:

1. Morning Tour in Kyoto

Destination: Nijo Castle, Golden Pavilion, Kyoto Imperial Place or Higashi Honganji Temple and Kyoto Handicraft Center

Date: Daily (Sept. 30 to Oct. 4, 2008)

Time: 8:45 a.m. to 12:40 p.m.

Fee: 5,600 JPY per person

2. Afternoon Tour in Kyoto

Destination: Heian Shrine, Sanjusangendo Hall and Kiyomizu Temple

Date: Daily (Sept. 30 to Oct. 4, 2008)

Time: 1:40 p.m. to 5:30 p.m.

Fee: 5,600 JPY per person

3. 1 Day Tour in Kyoto

Destination: Combination of Tour 1 and 2 , with lunch at Kyoto Handicraft Center

Date: Daily (Sept. 30 to Oct. 4, 2008)

Time: 8:45 a.m. to 5:30 p.m.

Fee: 11,600 JPY per person

4. Afternoon Tour in Nara

Destination: Todaiji Temple, Peaceful Deer Park, Vermilion-hued Kasuga Shrine and Countryside drive

Date: Daily (Sept. 30 to Oct. 4, 2008)

Time: 1:40 p.m. to 7:00 p.m.

Fee: 6,600 JPY per person

5. 1 Day Tour in Nara

Destination: Combination of Tour 1 and 4 , with lunch at Kyoto Handicraft Center

Date: Daily (Sept. 30 to Oct. 4, 2008)

Time: 8:45 a.m. to 7:00 p.m.

Fee: 12,600 JPY per person

- * Please refer to the official web site and guide book for the details of tours and sites.
- * Please revise and/or cancel your reservation by logging-in to your Personal Page. In case of cancellation, your deposit will be refunded after deducting the cancellation fees.



Carvings of roof



Nijyo Castle, KYOTO

Payment

Payment is limited to credit card. All major credit cards are accepted. All applications for registration and booking will be accompanied by a remittance covering the total payment.

* We're sorry for the inconvenience but the on-line system can not accept payments if the e-mail of the credit card holder is a free e-mail (such as hotmail, yahoo). Please use official institutional / organizational e-mail. If you have difficulties in payment by credit card, please contact JTB Corp.

Venue



Address:

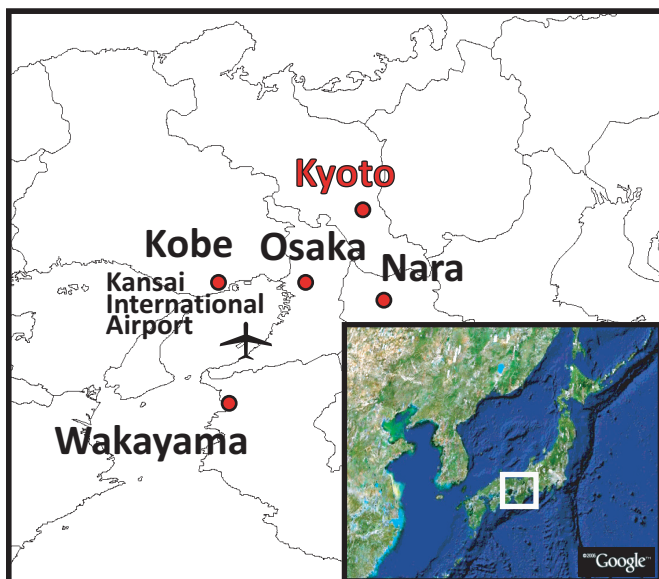
605 Tatsumae-cho, Shimochoja-machi-agaru,
Karasuma-dori, Kamigyo-ku, Kyoto, 602-0912, Japan.

TEL: +81-75-411-0111

FAX: +81-75-411-0403

URL: <http://www.hotelgp-kyoto.com/>
(in Japanese)

Map & Access



From Kansai International Airport To Kyoto Station

- * JR Airport Express, approx 75 min, 3,500 yen
- * Limousine Bus, approx. 95 min, 2,300 yen
- * MK taxi (shuttle service), 3,500 yen each

From JR Kyoto Station To Hotel Kyoto Garden Palace

- * Take the Kyoto City Subway, Karasuma Line bound for Kokuzaikaikan Station, and get off at Marutamachi Station. Walk north along Karasuma Street, and Hotel Kyoto Garden Palace will be on your left at the corner of the third signal. The hotel is approximately a 10 minute walk from Marutamachi Subway Station.



More Information

http://www.chikyu.ac.jp/HC_2008

Registration, Accommodation and Tours

JTB Western Japan, Corp. MICE Center
HydroChange 2008 Desk

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Kyutaro-machi 2-1-25, JTB Bldg. 7F, Chuo-ku,
Osaka 541-0056 Japan

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E-mail: westec_op8@jtb.jp

Office hours: 9:30-17:30

(Local Time GMT + 9:00, weekdays only)

Scientific Contents

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