

1st International Conference

# Global Warming and the Human-Nature Dimension in Siberia

Social Adaptation to the Changes of the Terrestrial  
Ecosystem, with an Emphasis on Water Environments

to be held and co-organized with the

6th Annual International Workshop  
C/H<sub>2</sub>O/Energy balance and  
climate over boreal and arctic  
regions with special emphasis  
on eastern Eurasia

**7-9 March, 2012**

Location: RIHN Lecture Hall

**Organized by**  
Research Institute for Humanity  
and Nature (RIHN)

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## Wed, 7 March

- 09:00 Registration  
09:30 Opening ceremony  
**Yo-ichiro Sato**  
(Deputy Director-General of RIHN)  
(opening address)  
**Tetsuya Hiyama**  
(introducing objectives of the conference)

### Session 1

#### *Water and carbon budgets at plot scale*

(chaired by Yuji Kodama)

- 09:50 **Trofim C. Maximov**  
(keynote speech)  
The main results of 20-year-old joint studies between Russia and Japan on a changing climate and permafrost in north-east Siberia, Russia
- 10:15 **Ayumi Kotani, Takeshi Ohta, Trofim C. Maximov**  
Seasonal variation of linkage between net ecosystem exchange of H<sub>2</sub>O and CO<sub>2</sub> over boreal forest at eastern Siberia
- 10:40 **Roman Petrov, Alexander V. Kononov, Trofim C. Maximov**  
Key features of soil CO<sub>2</sub> efflux in taiga larch forests of central and south-eastern Yakutia
- 11:05 Break
- 11:20 **Yuji Kodama**  
Snowmelt heat balance of the snowpack in a larch forest in eastern Siberia
- 11:45 **Takeshi Yamazaki**  
Simulation of soil water and temperature in eastern Siberian taiga forests by a one-dimensional land-surface model
- 12:10 **Shunsuke Tei, Atsuko Sugimoto, Hitoshi Yonenobu, Trofim C. Maximov**  
Changes in relationship between larch tree growth and climate in eastern Siberia over past 100 years
- 12:35 **Discussion**  
13:00 Lunch and poster presentations

### Session 2

#### *Water and carbon cycles in regional-continental scale*

(chaired by Eddy Moors)

- 14:00 **Eddy Moors**  
(keynote speech)  
Feedback mechanisms between the water and carbon cycle at a regional scale
- 14:25 **Kazuhiro Oshima, Tetsuya Hiyama**  
Seasonal and interannual variations of the Lena River discharge and those relationships with atmospheric water cycle
- 14:50 **Tetsuzo Yasunari, Tatsuro Watanabe, Hatsuki Fujinami**  
Interannual variation of summer hydro-climate in eastern Siberia
- 15:15 Break
- 15:30 **Atsuko Sugimoto**  
Ecosystem function of taiga-tundra boundary in eastern Siberia
- 15:55 **Hisashi Sato**  
Simulation study of the vegetation structure and function in eastern Siberian larch forests using the individual-based vegetation model SEIB-DGVM
- 16:20 **Discussion**, closure at 17:00

## Thu, 8 March

### Session 3

#### *Permafrost degradation and greenhouse gases emission*

(chaired by Jacobus (Ko) van Huissteden)

- 09:00 **I. Kleptsova, M. Glagolev, E. Lapshina, S. Maksyutov**  
(keynote speech)  
Landcover classification of the Great Vasyugan mire for estimation of methane emission
- 09:25 **A. Budishchev, Y. Mi, A. Gallagher, J. van Huissteden, G. Schaepman, A.J. Dolman, T.C. Maximov**  
Validation of methane emission model using eddy covariance observations and footprint modeling
- 09:50 **Angela Gallagher, Bingxi Li, Artem Budishchev, Jacobus van Huissteden, Monique Heijmans**  
Increased greenhouse gas emission from thaw ponds in Siberian arctic tundra on continuous permafrost
- 10:15 Break
- 10:30 **Jacobus (Ko) van Huissteden, Angela Gallagher, Artem Budishchev**  
Ecosystem recovery: a neglected factor in carbon release by permafrost degradation
- 10:55 **Ake Nauta, Monique Heijmans, Daan Blok, Frank Berendse**  
Removal of *Betula nana* causes permafrost degradation and triggers changes in geomorphology and hydrology
- 11:20 **Kazuki Aiba, Takahiro Sasai, Yasushi Yamaguchi**  
Analysis of water, heat and carbon balances over the Siberia region by using biosphere model BEAMS
- 11:45 **Discussion**  
12:15 Lunch and poster presentations
- 13:15 RIHN tour

### Session 4

#### *Permafrost landscape and groundwater regime*

(chaired by Alexander Fedorov)

- 14:00 **Alexander Fedorov**  
(keynote speech)  
Permafrost landscapes response to recent climate changes in eastern Siberia
- 14:25 **Leonid Gagarin, Alexander Kolesnikov**  
Effect of extreme hydroclimatic conditions on groundwater systems in permafrost, central Yakutia
- 14:50 **Tetsuya Hiyama, Kazuyoshi Asai, Alexander Kolesnikov, Leonid Gagarin, Victor Shepelev**  
Residence time estimation of permafrost groundwater at Yakutsk region, eastern Siberia
- 15:15 Break

### Session 5

#### *Flood-induced hazards and benefits*

(chaired by Hiroki Takakura)

- 15:30 **Hiroki Takakura** (keynote speech)  
The local conceptualization of river ice thawing and the spring flooding of the Lena River under the global warming
- 15:55 **Toru Sakai, Tetsuya Hiyama, Junko Fujiwara, Semen Gotovtsev, Leonid Gagarin**  
Flood disaster caused by permafrost degradation in the far north of Siberia
- 16:20 **Vanda Ignatyeva**  
Regional problems of the reducing vulnerability to extreme floods and climate change: Yakutia case
- 16:45 **Junko Fujiwara**  
Flood and migration policy in the Republic of Sakha
- 17:10 **Discussion**, closure at 17:45

## Fri, 9 March

### Session 6

#### *Wild and domestic animals in sub-Arctic region*

(chaired by Shirow Tatsuzawa)

- 09:00 **Innokentiy M. Okhlopkov**  
(keynote speech)  
Current Status of the wild reindeer populations and domestic reindeer farming in Sakha Republic
- 09:25 **Shirow Tatsuzawa, Innokentiy M. Okhlopkov, Egor V. Kirillin, Egor A. Nikolaev, Nikita G. Solomonov**  
The migration of eastern Siberian wild reindeer: where, when, how and why do they do?
- 09:50 **Atsushi Yoshida**  
Reindeer herding and environmental change in the Kobyai and Olenyok districts, Sakha Republic
- 10:15 **Atsushi Nakada**  
Reindeer herding and environmental change in the Tompo district, Sakha Republic
- 10:40 Break
- 10:55 **Tohru Ikeda**  
Furbearer hunting and invasive alien species issues in Yakutia

### Session 7

#### *Adaptation to climate change*

(chaired by Susan A. Crate)

- 11:20 **Susan A. Crate** (keynote speech)  
Water, water everywhere: perceptions of chaotic water regimes in northeastern Siberia, Russia
- 11:45 **Sardana Boyakova**  
History of development of transport infrastructure in Yakutia
- 12:10 **Kyong Wan Lee**  
Biblical suggestions of CSR in regard to energy projects in Lensk district, Republic of Sakha: focusing on climate and environmental problems
- 12:35 **Discussion**  
13:00 Lunch and poster presentations  
14:00 **General Discussion**
- 15:30 Closing ceremony  
**Tetsuya Hiyama**  
(concluding remarks)  
**Tsugihiko Watanabe**  
(Deputy Director-General of RIHN)  
(closing address)