

# Northern Eurasia Earth Science Partnership



**(NEESPI): An update**

**Pavel Groisman**

**UCAR Project Scientist at NOAA National Climatic Data Center, Asheville,  
North Carolina, USA**

**Vladimir Kattsov**

**Voeikov Main Geophysical Observatory, St. Petersburg, Russia**

**Richard Lawford**

**International GEWEX Project Office, Washington, DC, USA**

## Recognition



**NEESPI is an interdisciplinary program of internationally-supported Earth systems and science research that addresses large-scale and long-term manifestations of climate and environmental change.**

**NEESPI Study Area includes: Former Soviet Union, Northern China, Mongolia, Fennoscandia, & Eastern Europe**

**NEESPI duration ~ 10 years (started in 2004)**

## **Current NEESPI Statistics (August 2009):**

**More than 560 scientists from more than 200 institutions of 30 countries are working on more than 130 individual funded projects under the Initiative umbrella (with annual budget ~\$15M), several more projects are in the process of joining NEESPI.**

**Additionally, NEESPI receives in kind assistance from EU, US, Russian, Chinese, Japanese, Ukrainian and International Agencies and Institutions.**

# NEESPI Outreach, <http://neespi.org>

**During the past 3 years, ~25 dedicated NEESPI Workshops and 6 NEESPI Open Science Sessions at the International Meetings were convened and more than 350 papers and books were published (the total number of publications exceeds 500).**

**In April 2007:** 1st Special NEESPI issue (13 papers) in *Global and Planetary Change*

**In December 2007:** 2nd NEESPI Special issue in *Environmental Research Letters* (15 papers)

**In April 2009:** Book "*Regional Aspects of Climate-Terrestrial-Hydrologic Interactions in Non-boreal Eastern Europe*" Groisman and Ivanov (Eds.) published by Springer Verlag.

**In May 2009:** An overview NEESPI paper in *Bull. Amer. Meteorol. Soc.*

**In October 2009:** the 3<sup>rd</sup> NEESPI Special issue in *Environmental Research Letters* (current status: **35** papers were published and /or accepted)

## **Current situation:**

- **Two more books are *in press and scheduled for early 2010*. Both of them are devoted to Eurasian Arctic (land and sea shelf)**

**A new book is planned for 2010:**  
**“Environmental Changes in Siberia:  
Regional Changes and their Global  
Consequences”**

**Introduction:** *Gutman, Groisman, Gordov*

- **Climate change:** *Groisman*
- **Water cycle changes:** *A. Shiklomanov*
- **Changes in the cryosphere:** *V. Romanovsky,*
- **Terrestrial ecosystems and their changes:** *Shvidenko ,*
- **Human dimensions of land cover and land use changes:**  
*Bergen*
- **Atmospheric pollution:** *Baklanov*
- **Development of Information systems:** *Gordov*

**Integration and Synthesis:** *Lead authors*

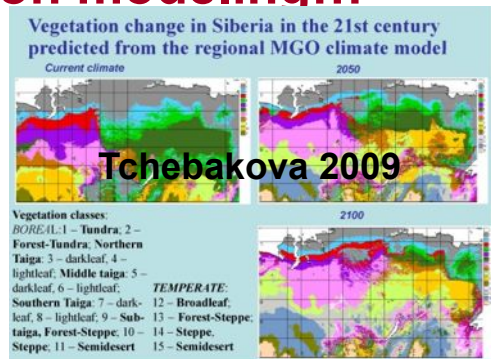
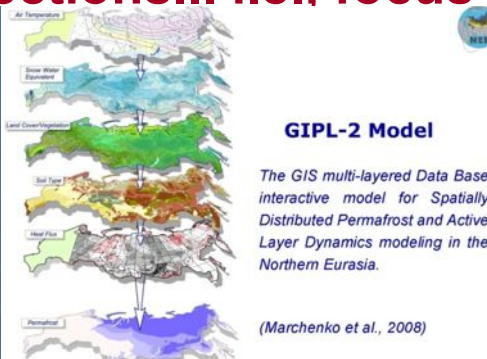
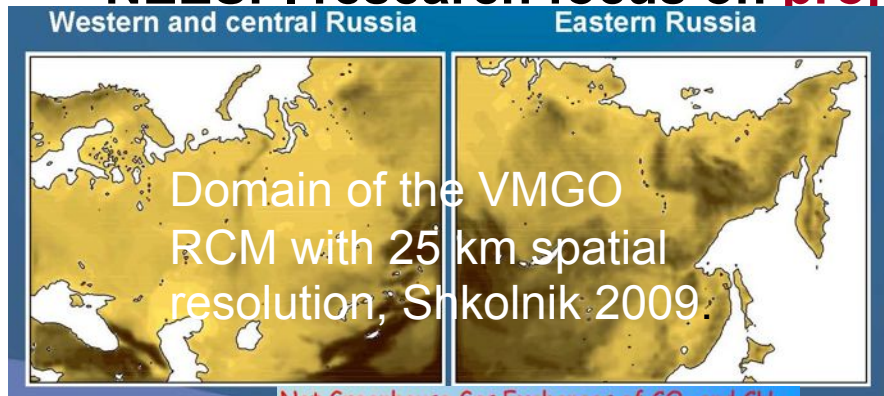
# Last year NEESPI Meetings, Workshops, Sessions

- 15-19 December 2008, San-Francisco, USA. **NEESPI Session at the Annual Fall AGU Meeting**
- 4-6 March 2009, St. Petersburg, Russia. **NEESPI programmatic Workshop “Hydrological application of changes in land cover/use, water management and climate across Northern Eurasia”**
- April 20-23, 2008, Vienna, Austria. **NEESPI Session at the EGU General Assembly**
- April 24, 2009, Sopron, Hungary. **First Consultative Workshop of the Regional NEESPI Research Center for Non-boreal Southeast Europe**
- July 14-15, 2009, Krasnoyarsk, Russia. **Regional NEESPI Workshop devoted to Siberia**
- Sept. 9-15, 2009, Bishkek, Kyrgyzstan. **Regional Event devoted to High Elevation Studies (summer school, and two workshops)**
- 16-17 December 2009, San-Francisco, USA **These NEESPI Sessions**

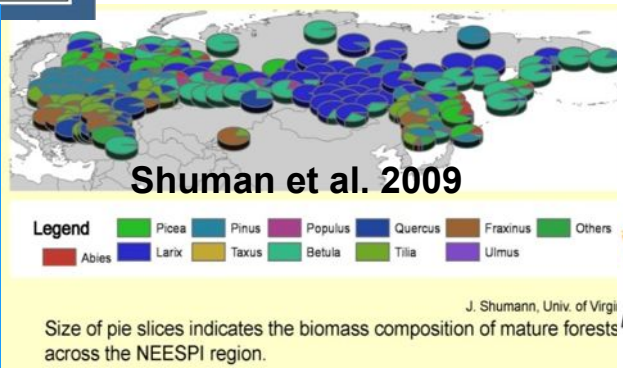
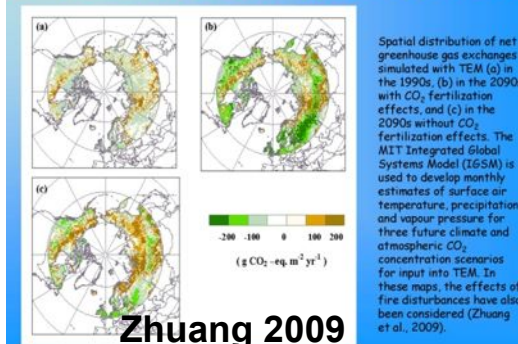
## Plans for 2010

May 2-9, 2010, Vienna, Austria. **NEESPI Session at the EGU Assembly**  
June 14-18, 2010, Miedzyzdroje, Poland. **BALTEX Conference**  
July, 2010, Tomsk, Russia. **ENVIROMIS Conference**  
September 2010, Lanzhou, China, **3<sup>rd</sup> Int. Symp. on Arid Climate Change**  
December 2010, San-Francisco, 2010. **Next AGU Meeting**

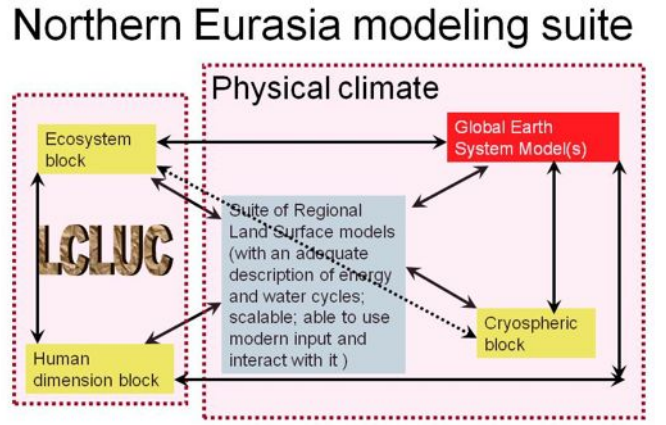
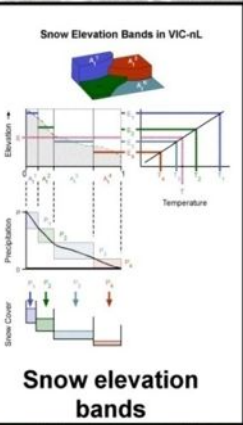
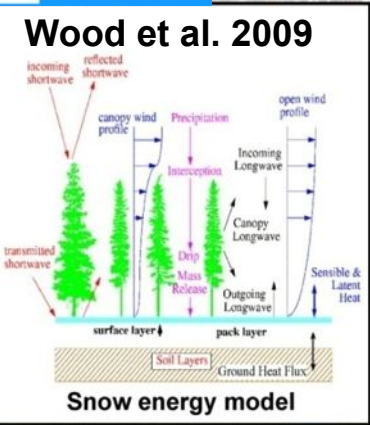
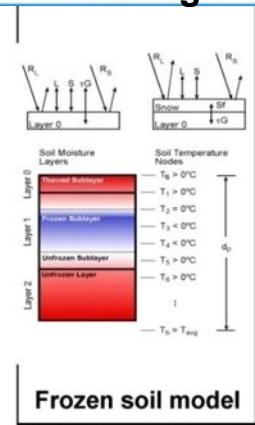
# First phase foci of NEESPI were monitoring and analyses. After the NEESPI Workshop in August 2007 at the Aspen Global Change Institute, a new course was accepted towards strengthening of the NEESPI research focus on projections... i.e., focus on modeling...



## Net Greenhouse Gas Exchanges of CO<sub>2</sub> and CH<sub>4</sub>



Efforts are made to blend modern RCMs with vegetation, carbon flux, permafrost, hydrological, and dust production models within a North Eurasia modeling suite and link it to the MIT Earth System model.



# Specialty models (or a configuration of models) and/or recent results of their application within the NEESPI domain

- **VMGO Regional Climate Model** (Shkolnik et al. 2008, 2010)
- **Russian Global NWP Model** SL-AV at RAS Inst. of Numerical Math. and Hydrometcentre of Russia (Prof. Mikhail Tolstykh, 2009, Personal Communication)
- **MIT Earth System Model** (Sokolov et al. 2009)
- **Coupled regional modeling system WRF-DuMO** (Darmenova et al. 2009)
- Coupling of VMGO RCM with **Siberian Biospheric Model** (Tchebakova et al. 2009)
- **Permafrost Dynamic Model** (Marchenko et al. 2008)
- **Terrestrial Ecosystem Model** (Zhuang et al. 2009)
- Application of **GAP model driven by in situ data** (Shuman et al. 2009)
- **Specialty modifications to the VIC Model** (Wood, Troy, et al. 2009) **and the WBMPlus at Univ. of New Hampshire** (Shiklomanov et al. 2007, 2009) to simulate/project the changes in the water cycle in the cold regions



## **Organizational update**

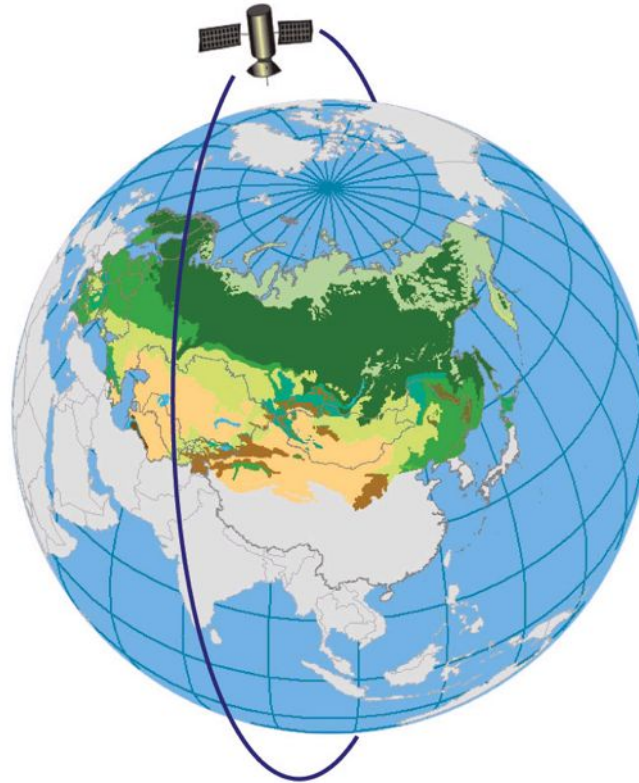
**A New NEESPI international Office  
at the University of Helsinki,  
Finland will be fully functional  
starting on March 1, 2010**

**FOR MORE INFORMATION SEE THE NEESPI WEB SITE:**

***<http://neespi.org>***



(COURTESY PHC)



**Side Note:**  
*“NEESPI” is pronounced  
approximately like the  
Russian phrase for  
“Don’t sleep “*

# **Northern Eurasia Earth Science Partnership Initiative**