

NATO Advanced Research Workshop
**“Regional aspects of climate-terrestrial-
hydrologic interactions in Eastern Europe“**
(NEESPI Regional Non-boreal Europe Meeting)
Odessa, Ukraine, August 23-28, 2008

Meeting is jointly hosted by Odessa State Polytechnic University and Odessa State Environmental University, Odessa, Ukraine. **Meeting venue:** Hotel “Valentina” in the Arcadia resort zone of Odessa

Background. Strong atmosphere-hydrology-biosphere feedbacks (including human activity) affect the rate and sign of changes in the Earth’s system and having impacts on socioeconomic relationships. These processes are related to an increased number and intensity of extreme weather events with consequent property damages and changes in land use. The “Regional Aspects of Climate-Terrestrial-Hydrologic Interactions in Eastern Europe” workshop aims to bringing together scientists involved in Earth System programmes, members of the Northern Eurasia Earth Science Partnership Initiative (NEESPI) and managers from research and educational organizations who have vested interests in climate-change and environmental studies in Eastern Europe. We have still a limited knowledge of how the regional systems and their components, such as the forest, forest-steppe, steppe, river basins and the Black Sea coastal zone, function on their own and interact with the global Earth’s system. Therefore, the goal of this workshop is to assess the present state of research on land cover, atmosphere and water resources of the region and to discuss directions for future studies. The meeting participants are requested to summarize the information about significant changes in the landscape associated with warming climate and socio-economic impacts as well as to specify sources of these changes and feedbacks to the atmospheric circulation and water cycle.

Meeting Agenda

22 August, Friday

Arrivals; evening activities (organizing committee meeting, hotel “Valentina”)

23 August, Saturday

Session 1. 09:00 – 10:45. International Environmental Projects.

Chair: Sergiy Ivanov (Odessa Environmental University)

09:00 – 09:15 Welcome from Local Organizers and NEESPI Leaders (**Sergiy Ivanov**)

09:15 – 09:45 NEESPI status and its Projects in Eastern Europe (**Pavel Groisman**)

09:45 – 10:15 NASA projects on land cover and land use change in non-boreal Europe (**Garik Gutman**)

10:15 – 10:45 Global Land Project (GLP): Major scientific questions for coupled modeling (**Richard Aspinall**)

10:45 – 11:15 Air pollution problems in Eastern Europe (**Evgeny Genikhovich**)

10:45 – 11:15 Coffee Break

Session 2. 11:45 – 13:45. Regional and National Environmental Projects.

Chair: Csaba Mátyás (University of West Hungary)

11:45 – 12:15 Climate change prediction using remote sensing data on Ukraine (**Vadim Lyalko**)

12:15 – 12:45 Land-Use and Forestry sector of Ukraine in climate change context (**Igor Buksha**)

12:45 – 13:15 Ukrainian segment of GEOSS: Status and prospects (**Natalia Kussul**)

13:15 – 13:45 Remote Sensing Education and Research Program: Case study for land cover monitoring of non-boreal Russia (**Elena Cherepanova**)

13:45 – 15:45 Lunch; Free time;

16:00 Transportation to the Odessa Port

Session 3. 17:00 – 19:00. Black and Azov Seas studies: Focus on the Coastal zone.

Chair: Olexandr Svitlichnyy (Mechnikov Odessa National University)

Venue: Khadji-bey ship

24 August, Sunday

Session 4. 09:00 – 11:00. Land Cover – Land Use Change Studies in Eastern Europe.

Part 1. Chair: Garik Gutman (NASA HQ)

09:00 – 09:30 Monitoring Forest Change in the Black Sea Region: Implications for Terrestrial Carbon Dynamics (**Curtis Woodcock**)

09:30 – 10:00 Non-boreal forests of Eastern Europe in a changing world - the role in

- functioning the Earth System (**Anatoly Shvidenko**)
- 10:00 – 10:30 Land use and land cover changes in non-boreal Eastern Europe
(**Mutlu Ozdogan**)
- 10:30 - 11:00 Environmental and social impact of climatic changes at the xeric limits of
the closed forest zone in Eastern Europe (**Csaba Mátyás**)

11:00 – 11:30 Coffee Break

**Session 5. 11:30 – 13:00. Land Cover – Land Use Change Studies in Eastern Europe.
Part 2. Chair: Curtis Woodcock (Boston University)**

- 11:30 – 12:00 Cropland abandonment during the post-socialist transition in
Southern Romania (**Daniel Müller**)
- 12:00 – 12:30 Land Distribution and assessment in the Ukrainian Steppe
(**Larisa Anisimova**)

12:30 – 14:00 Lunch

14:00 - 16:00 General Poster Session

- Socioecological Dynamics in Armenia: Linking forest cover, biodiversity and rural livelihoods (**Daniel Mueller**)
- Flooding response to surface mining and reclamation: A comparative study (**Todd Lookingbill**)
- Northern Eurasia Earth Science Partnership (NEESPI): An update (**Pavel Groisman**)
- Trends in Land Surface Phenologies in the Don and Dnieper River Basins 2000-2007: The MODIS perspective (**Valeriy Kovalskyy**)
- Experiments on computing of the vertical circulation in seas, lakes, and reservoirs using baroclinic mode (**Konstantin Kunshenko**)
- Mathematic Approaches Development to Ecology-Biological Land Differentiation (**Mykola Kharytonov** and co-authors)
- The generation of forest ecosystems types digital map for Romania: Problems and solutions (**Vladimir Gancz**)
- Land cover change in Georgia (**Pontus Olofsson, Paata Torchinava**)
- Satellite Data Assimilation for Vegetation Health Monitoring in Ukraine (**Andrii Shelestov**)
- Spatial database development for greenhouse gas emission estimation on the Russian Federation using remote sensing and GIS (**Irina Karachevtseva**)

15:00 – 15:30 Refreshments

16:00 – 19:00. Excursion to Odessa's downtown

25 August, Monday

**Session 6. 09:00 – 11:00. Regional Climate Change Studies.
Part 1. Chair: Richard Aspinall (Global Land Project)**

- 09:00 – 09.30 Climate in the late 20th and 21st centuries over the northern
Eurasia: RCM and IPCC AR4 simulations (**Igor Shkolnik**)
- 09:30 – 10:00 Assessment of the Projected Climate Change and Its Impacts on
Water Balance in the Black Sea - Caspian Region Using Regional
Climate Models (**Maria Shahgedanova**)
- 10:00 – 10:30 Regional model simulations of climate and climate change

- over south-eastern Europe (**Simon Krichak**)
 10:30 – 11:00 Regional climate and environmental change: Republic of Moldova
 (**Roman Corobov**)

10:30 – 11:00 Coffee Break

Session 7. 11:00 – 13:00. Regional Climate Change Studies.
Part 2. Chair: Clemens Simmer (University of Bonn)

- 11:00 – 11:30 Regional heat waves in current and future climates
 (**Alexander Gershunov**)
 11:30 – 12:00 Regional climate modeling of daily precipitation characteristics
 (**Susanne Bachner**)
 12:00 – 12:30 Precipitation statistics in Ukraine: the interannual variability and
 circulation epochs (**Sergiy Ivanov**)
 12:30 – 13:00 Long - term forecasting of natural disasters under projected climate
 changes in Ukraine (**Yuriy Kostyuchenko**)

13:00 – 14:30 Lunch

**Session 8. 14:30 – 17:30. Informational Support for Regional Studies in Eastern
 Europe. Chair: Pavel Groisman (NEESPI Project Scientist)**

- 14:30 – 15:00 The NASA NEESPI Data Center to support studies of climate and
 environmental changes in non-boreal Europe (**Suhung Shen**)
 15:00 – 15:30 “Transparent World” efforts in support of oil spills’ monitoring on
 land and sea (**Dmitry Aksenov**)
 15:30 – 16:00 Baseline climatological data sets for Eastern Europe area
 (**Vyacheslav Razuvaev**)

16:00 – 16:30 Refreshments

- 16:30 – 17:30 General Discussion on Data Needs for Regional Studies in
 Eastern Europe

26 August, Tuesday

7:30-22:00 **Field Trip to the Danube Ecological Reserve**
http://neespi.org/web-content/Danube_Reserve_info.pdf

**On the road: talks on hydrological and ecological aspects of the Danube delta:
 National and International perspectives. Discussion on possible optimal solutions**
Discussion Lead/Chair: Nikolay Berlinskiy (Institute of Biology of South Seas).

Invited Speakers:

- Nikolay Berlinskiy (Ukraine)** Assessment of interactions of land use and the state of
 shallow water s of the Black Sea in the Danube delta.
Laura Alexandrov (Romania) (1) Ecological imbalance of Romanian costal lakes: Causes
 and effects. (2) Study of inland fisheries in Danube delta.

27 August, Wednesday

Session 9. 09:00 – 11:00. Regional Hydrological Studies in Eastern Europe.
Chair: Feodor Surkov (Southern Federal University)

- 09:00 – 9:30 Regional climate modelling in Europe:
Focus on precipitation (**Clemens Simmer**)
- 09:30 – 10:00 Hydrological Changes in European Russia (**Alex Shiklomanov**)
- 10:00 – 10:30 Soil moisture and land cover changes in European Russia: In situ data
(**Nina Speranskaya**)
- 10:30 – 11:00 Application of the Snowmelt Runoff Model in the Kuban River Basin by using
MODIS satellite images (**Mikhail Georgievsky**)

11:00 – 11:30 Coffee Break

Session 10. 11:30 – 12:45. Regional Land Use Studies in Eastern Europe.

**Chair: Igor Buksha (Ukrainian Research Institute of
Forestry and Forest Melioration)**

- 11:30 – 12:00 Soil erosion induced degradation of landscapes in Ukraine: modelling,
computation and prediction (**Olexandr Svitlychnyy**)
- 12:00 – 12:30 Climate and Managed Land in Ukraine: Integrating Data and
Models of Land Use (**Mykola Zalogin**)
- 12:30 - 13:00 The GLOBE Program in Eastern Europe and Russia (**Teresa Kennedy**)
- 13:00 – 13:30 Post-socialist land cover change in Eastern Europe, detecting agricultural
abandonment across several countries (**Alexander Prishchepov**)

13:30 – 15:00 Lunch

**Session 11. 15:00 – 17:00. Lead: Pavel Groisman, (NEESPI Project Scientist and the
NATO Advanced Research Workshop Co-Director)**

- 15:00 – 16:45 General discussion
- 16:45 – 17:00 The Workshop Proceedings Preparation; assessment of available drafts.

28 August, Thursday

09:00 – 12:00 **Work in small groups, Preparation of the Workshop documents**

Off-line activity: Venue “Odessa Polytechnic University, 2 Shevchenko Avenue”
Training course for early career scientists from Eastern Europe on the use of remote
sensing products (**Mutlu Ozdogan, Johan Olofsson**)

12:00 Adjourn