

## **Land Cover/Land Use Change Interactions with Climate in Northern Eurasia: International Cooperation and Education Activities in the NEESPI program (95)**

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Northern Eurasia - a geographic area, which includes the territory of the Former Soviet Union, northern China, Mongolia, Scandinavia and Eastern Europe is extensively studied in the framework of an international, interagency program NEESPI (Northern Eurasia Partnership Initiative, <http://neespi.org>). The area of Northern Eurasia plays a major role in the global carbon and water cycles merely due to its vast territory covered by the boreal forests and peat lands. Human activity has changed ecosystem types over most of the steppe and forest-steppe zones and over part of the forest zone causing numerous biogeochemical and biogeophysical feedbacks, and near-global environmental changes, affecting environmental health and quality of life. About half of the Northern Eurasian terrain has permafrost that controls the hydrosphere and biosphere of the eastern half of the continent. Thawing of permafrost due to global warming may affect not just the biogeochemical processes but will also produce major changes in land cover and hydrology, which in turn would affect humans. Northern Eurasia has been specifically vulnerable due to the dramatic socio-economic shifts throughout this region during the last decade. The rapid land-use changes create the possibility for large and significant biological and climatic feedbacks in this region that could be of global importance. Regionally, significant changes in land use coupled with climate change may affect various sectors, including forestry, coastal zone and agricultural systems as well as society, including human health issues. This talk will describe cooperation between US, European, Russian and Chinese scientific teams in studying ecosystem-climate feedbacks in Northern Eurasia. Educational aspects of the NEESPI program will also be discussed.