

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**

Life on the edge: “Most of Northern Eurasia does not receive a sufficient amount of heat and in the regions where there is enough heat there is a significant deficit of water”.

Rationale for NEESPI

- 1. Strong interactions in the system terrestrial ecosystem - atmosphere hydrosphere - cryosphere - human society and feedbacks to **global energy, water, and carbon cycles in the region and beyond****
- 2. Strong climatic and environmental changes**
- 3. Strong societal impacts and feedbacks**
- 4. Lack of tools to address science questions**

The overarching NEESPI science question:

- **How do Northern Eurasia's terrestrial ecosystems dynamics **interact** with and alter the biosphere, atmosphere, cryosphere, and hydrosphere of the Earth?**

This question can be reformulated in a pragmatic way as:

- **How do we develop our **predictive** capability of terrestrial ecosystems dynamics over Northern Eurasia for the 21st century to support global projections as well as informed decision making and numerous practical applications in the region?**

NEESPI Science plan major focuses

- **Focus on transient zones that are most vulnerable in the future changes**

<ul style="list-style-type: none">– Coastal zone– Tundra-forest	Cold Lands
<ul style="list-style-type: none">– Forest-steppe	
<ul style="list-style-type: none">– Steppe-desert– Mountains	Dry lands

- **Focus on feedbacks that make the projection of the future changes uncertain**
 - Biogeochemical feedbacks
 - Biogeophysical feedbacks
 - Human activity
- *NEESPI Research Priorities:*
 - (a) *the processes that directly feed back to the global Earth system and*
 - (b) *the processes of major societal importance*

Two modes of NEESPI expansion

- **Dedicated Calls** (recent NASA and RAS and perspective in the NIS, EU, and China)
- **Freely joined projects**
- **Benefits of NEESPI membership**
 - **Improved links** to collaborators in Northern Eurasia and to US and EU scientists working on similar problems
 - **Exchange** of ideas, datasets, and knowledge with other team members working on similar problems
 - **Synergistic approach in working on complex problems**
 - **Priority access** to remote sensing and in situ data collected over Northern Eurasia
 - **Education:** student exchange, doctoral and post-doc positions sharing among the Team Institutions

NEESPI Internal problem

- **Integration of NEESPI studies**
 - With more than 65 currently active NEESPI projects and about 20 in line to join the Initiative, we need to make the

Total output >

Σ (projects' output)

FOR MORE INFORMATION SEE THE NEESPI

WEB SITE: <http://neespi.org>



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

**Northern Eurasia Earth
Science Partnership Initiative**