

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

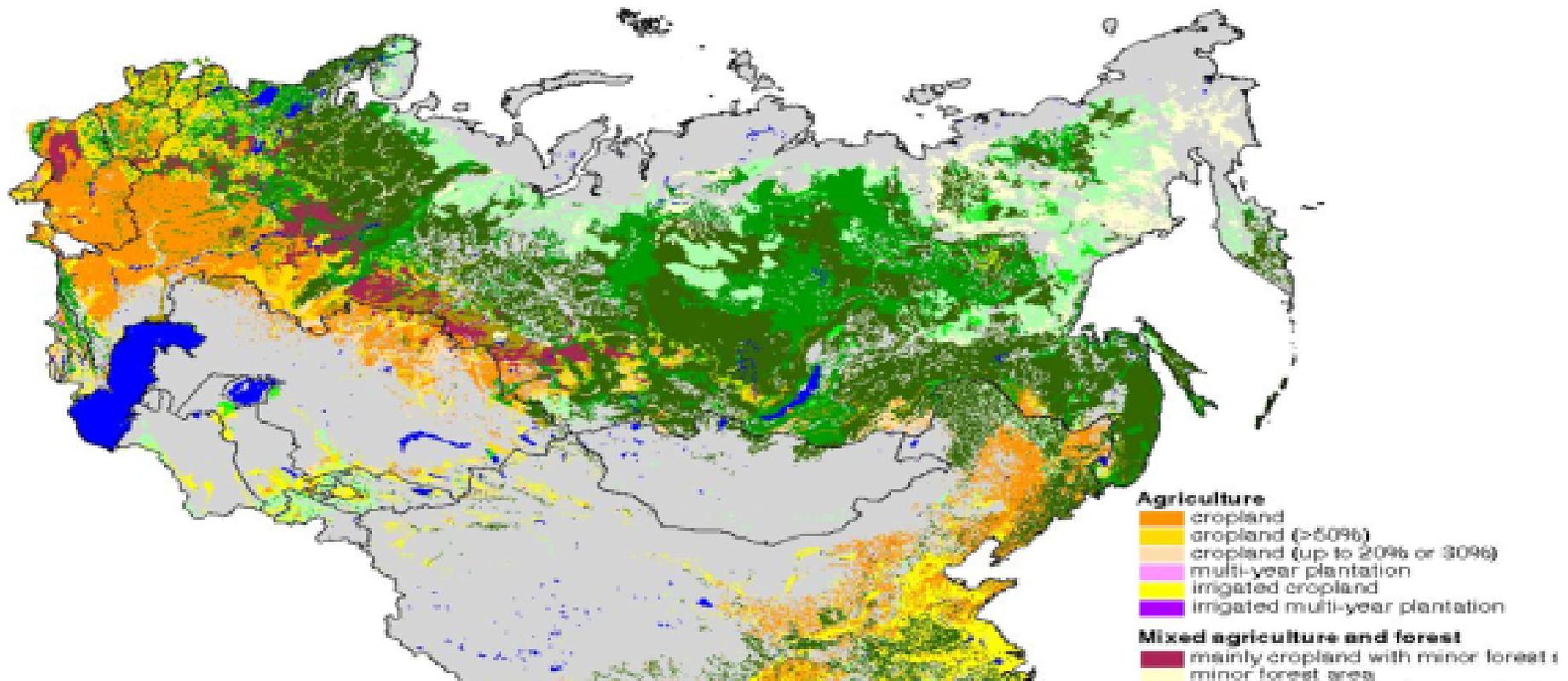
- **Focus on feedbacks that make the projection of the future changes uncertain**
 - Biogeochemical feedbacks
 - Biogeophysical feedbacks
 - Human activity
- *NEESPI Research Priorities:*
 - (a) the processes that directly feed back to the global Earth system and*
 - (b) the processes of major societal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

NEESPI research priorities

- Environmental processes that directly feed back to the global Earth system and
- Environmental processes of major societal importance

Natural changes are accompanied by the changes caused by human activity...

For example: More than 90% of steppe and forest-steppe zones in Northern Eurasia is currently cropland
(orange areas in the map)



**... some of these activities
lead to ecological disasters. For
example, most of the Aral Sea will
disappear in the next ten years**



July - September, 1989

1989



August 12, 2003

2003



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**

“Don’t sleep “ in dry land regions of Northern Eurasia

- The NEESPI reaction is: **Regional NEESPI Focus Research Center for Dry Land Processes Studies**
 - Recommendation of the NEESPI Science Advisory Panel (Feb. 2006)
 - **The Institute of Geographic Science and Natural Resources Research of Chinese Academy of Sciences** came with a framework of the Regional FRC organization (spring 2006)
 - Preliminary Organizational Workshop (Beijing, June 2006)
 - Full Size Proposal to NEESPI, Formation of the FRC SSC, its first Meeting, and ... here we are.