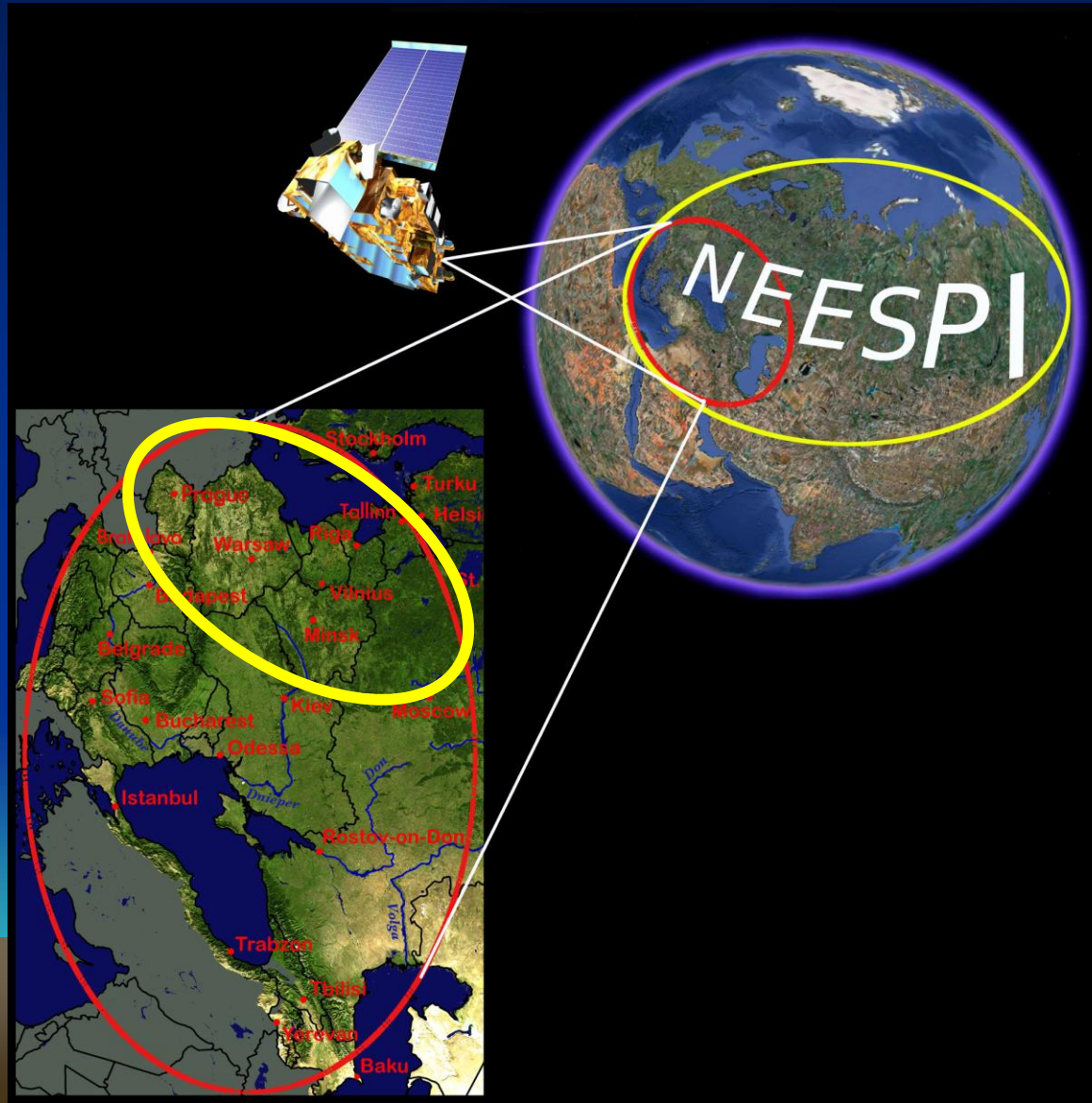


The NASA LCLUC and NEESPI Programs Update: Focus on Boreal/Temperate Zone

Garik Gutman,
LCLUC Program Manager
NASA Headquarters
Washington, DC

LCLUC Science Team + Regional NEESPI + GOFC-GOLD/NERIN



Welcome to Tartu!

A Glimpse of History: What's in a Name?

- Kiev Rus': Yaroslav the Wise, Prince of Kiev, raided the area in 1030, built his own fort there, and named it **Yuryev** (literally "Yury's" – Yury being Yaroslav's Christian name)
- Crusaders: In the beginning of the 13th century the fort of **Tarbatu**. In German, Swedish and Polish the town has been and sometimes still is known as **Dorpat**, a variant of Tarbatu, in Russian – **Derpt**
- Imperial Russia: In 1893, the city was officially retitled to the ancient Russian name **Yuryev**
 - The university was subsequently russified from 1895 on with the introduction of compulsory Russian in teaching
 - The Russian imperial university was relocated to Voronezh in 1918, but the Estonian University of Tartu opened in 1919



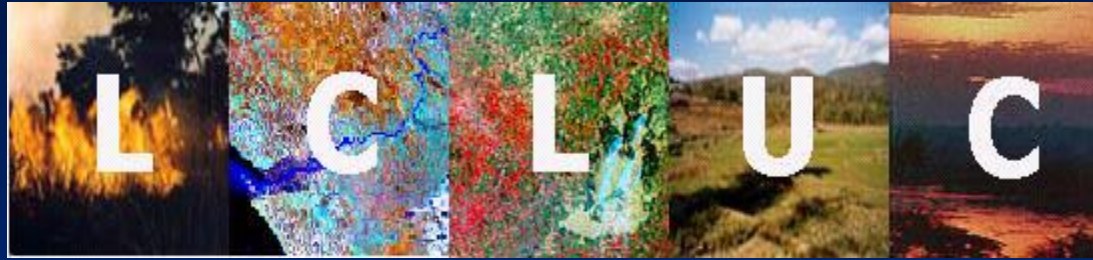
Recent Past and Present

- First Estonian independence: After World War I, the city officially became known by the Estonian name **Tartu**
- Soviet period: After the World War II, Tartu was declared a "closed town" to foreigners, as an air base for bombers was constructed
- Post Soviet period: The intellectual and cultural hub, especially since it is home to Estonia's oldest and most renowned university





Land-Cover/Land-Use Change Program




- LCLUC is an interdisciplinary scientific theme within NASA's Earth Science program. The ultimate vision of this program is ***to develop the capability for periodic global inventories of land use and land cover from space, to develop the scientific understanding and models necessary to simulate the processes taking place, and to evaluate the consequences of observed and predicted changes***
- <http://lcluc.hq.nasa.gov/>

Program Content

- Total ~40 projects => over 200 people
 - LCLUC Monitoring and Modeling (Projections)
 - LCLUC Impacts on
 - Carbon Cycle
 - Water Cycle
 - Climate
 - Environment
 - Biodiversity
 - Climate impact on land use
 - Vulnerability, Impacts, Adaptation



ST Meetings' Objectives

- program status
 - feedback from the PI's
 - identifying programmatic gaps, discussing new directions
 - Format: less oral talks, instead - topical overviews, it's not a conference
 - International: enhancing linkages with international programs and regional networks
- 

LCLUC Science Team Meetings

Washington: Spring (Cherry Blossom meeting)

2007: Climate/Carbon

2008: Joint CC&E Focus Area meeting

2009: LCLUC impacts on climate

2010: GLS LCLUC products

2011: 15th Anniversary (Focus TBD)



International: Fall-Winter

2007: Drylands (NEESPI/MAIRS)

Urumqi, China

2008: Tropics (MAIRS)

Kohn Kaen, Thailand

2009: Drylands (MAIRS/NEESPI)

Almaty, Kazakhstan

2010: Boreal/Temperate (NEESPI)

Tartu, Estonia

2011: Tropics (MAIRS) SE Asia



Education and Outreach

- Each PI should provide
 - information on MS and Ph.D. students graduating during and after the project
 - Thesis title, dates
- Statistics on LCLUC educational “products” are being collected
- Students achievements (awards, discoveries)



Data Issues

- *NASA promotes the free and open sharing of data*
- *USGS - Landsat data for free distribution*
- **LCLUC expects its PI's to make their data and products available to the broader community**
- Data sharing is encouraged
- Metadata page on the LCLUC web site
- LCLUCers use established Land Cover data distribution centers (EROS, GLCF, TRFC)
- Landsat-based GLS (1975, 1990, 2000, 2005) available
- GLS 2010 is being collected
- SPOT coverage for CONUS at USGS
- High resolution data from commercial sensors at NGA
- International cooperation on Landsat-like data

Ongoing Projects/Solicitations

- Climate impact on land use, adaptation
- Small contributions to non-NASA ongoing international projects programs (many on NEESPI)
- ROSES-2009 to be selected in September
 - Will be submitted not more than 61 proposal; ~ 10 to be selected
- Selected IDS to be announced
 - Many LCLUC-relevant elements



LCLUC Program Future Steps

- Enhance social science component in LCLUC projects
- Balance the program thematically and geographically
- Develop synthesis of global forest from GLS projects
- More emphasis on non-forest land-cover types
- Develop LCLUC calls on a regular, annual basis
 - Step-1 Dec 1, Step-2 June 1
- Revise the solicitation procedure
 - Two-step or one-step process?
 - Narrowing the calls?
- New, improved LCLUC website
- Continue the twice-a-year ST meetings structure
- Next year – the 15th Anniversary meeting for all alumni!

Northern Eurasia Earth Science Partnership Initiative (NEESPI)

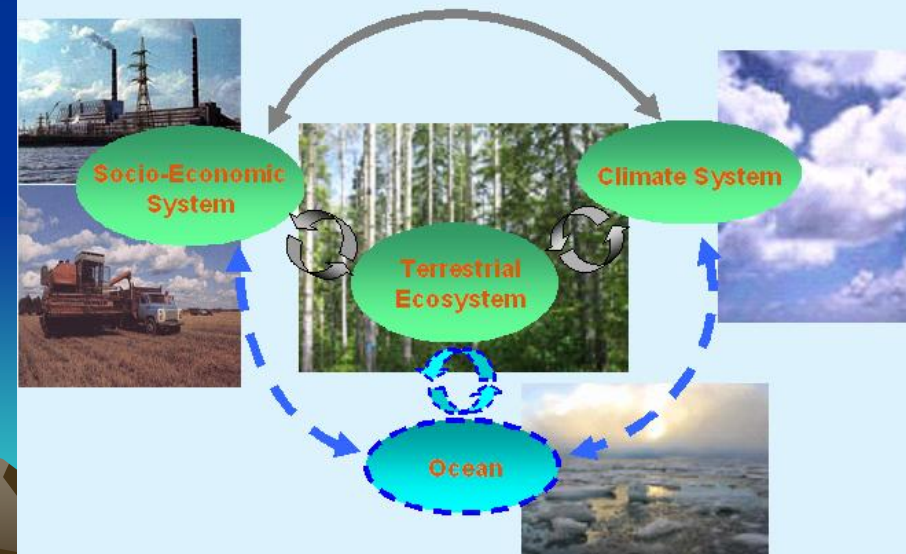
NEESPI is one of the WCRP Hydrometeorology Projects

Focus on climate-ecosystem interactions and societal impacts in boreal and non-boreal zones of Northern Eurasia

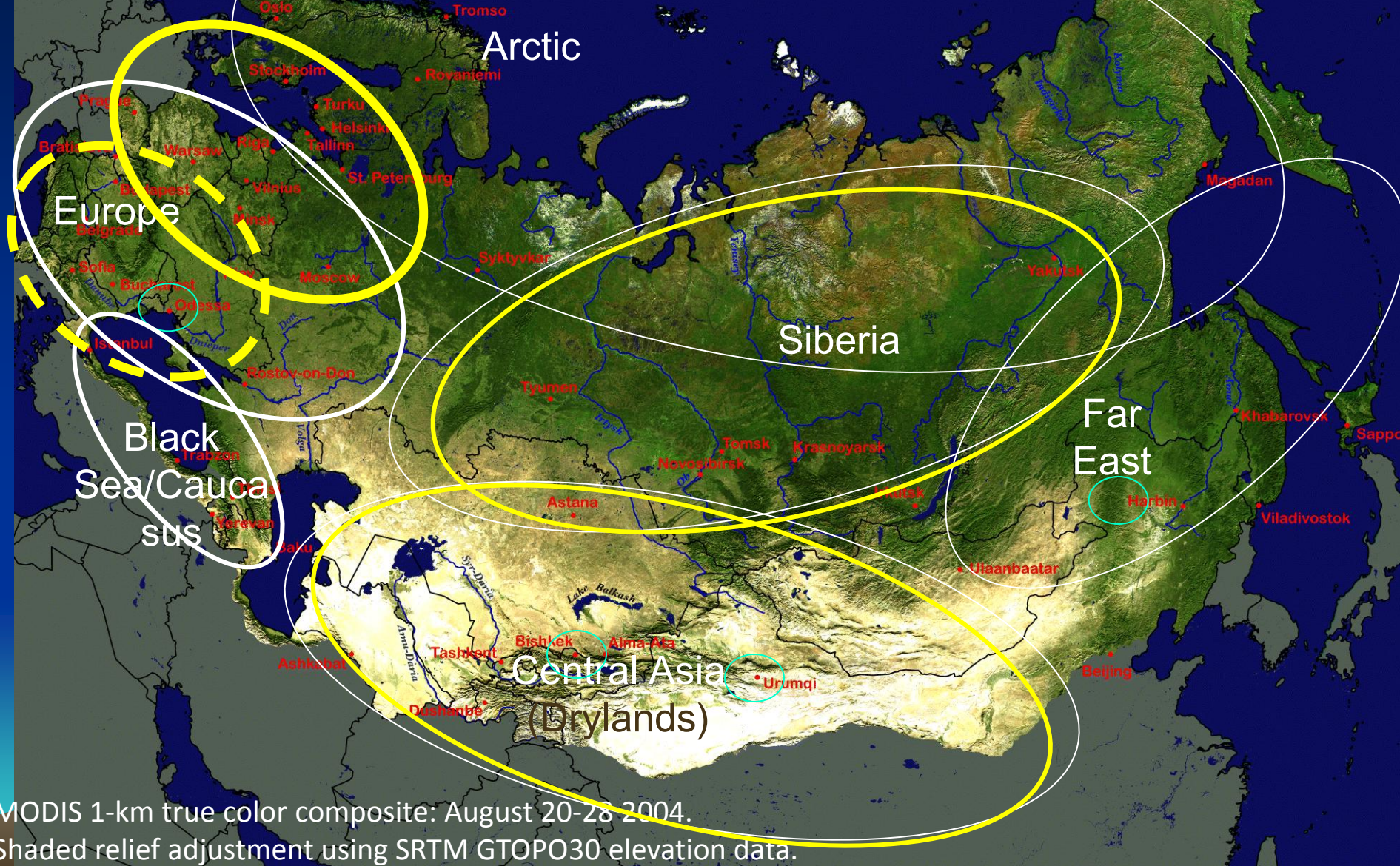
Goals:

- To evaluate the role of anthropogenic impacts on the regional ecosystems and climate and how it may affect the global climate
- To evaluate the consequences of global changes for regional environment, the economy and the quality of life in the region

Primary Components for study in Northern Eurasia as part of the Global System



NEESPI Regions and GOFC-GOLD NERIN sub-networks



MODIS 1-km true color composite: August 20-28 2004.
Shaded relief adjustment using SRTM GTOPO30 elevation data.
Produced by Mutlu Ozdogan, NASA GSFC

People

Land
use

Environ-
ment

***EASTERN EUROPE
PROVIDES A PERFECT
'NATURAL EXPERIMENT'***

How It All Started

- NASA had several projects in Russia, mostly in Siberia
- NASA and RAS had a bi-lateral agreement and joint projects
- The original idea was to develop a framework for coordination of these projects, exchange of data, people and ideas



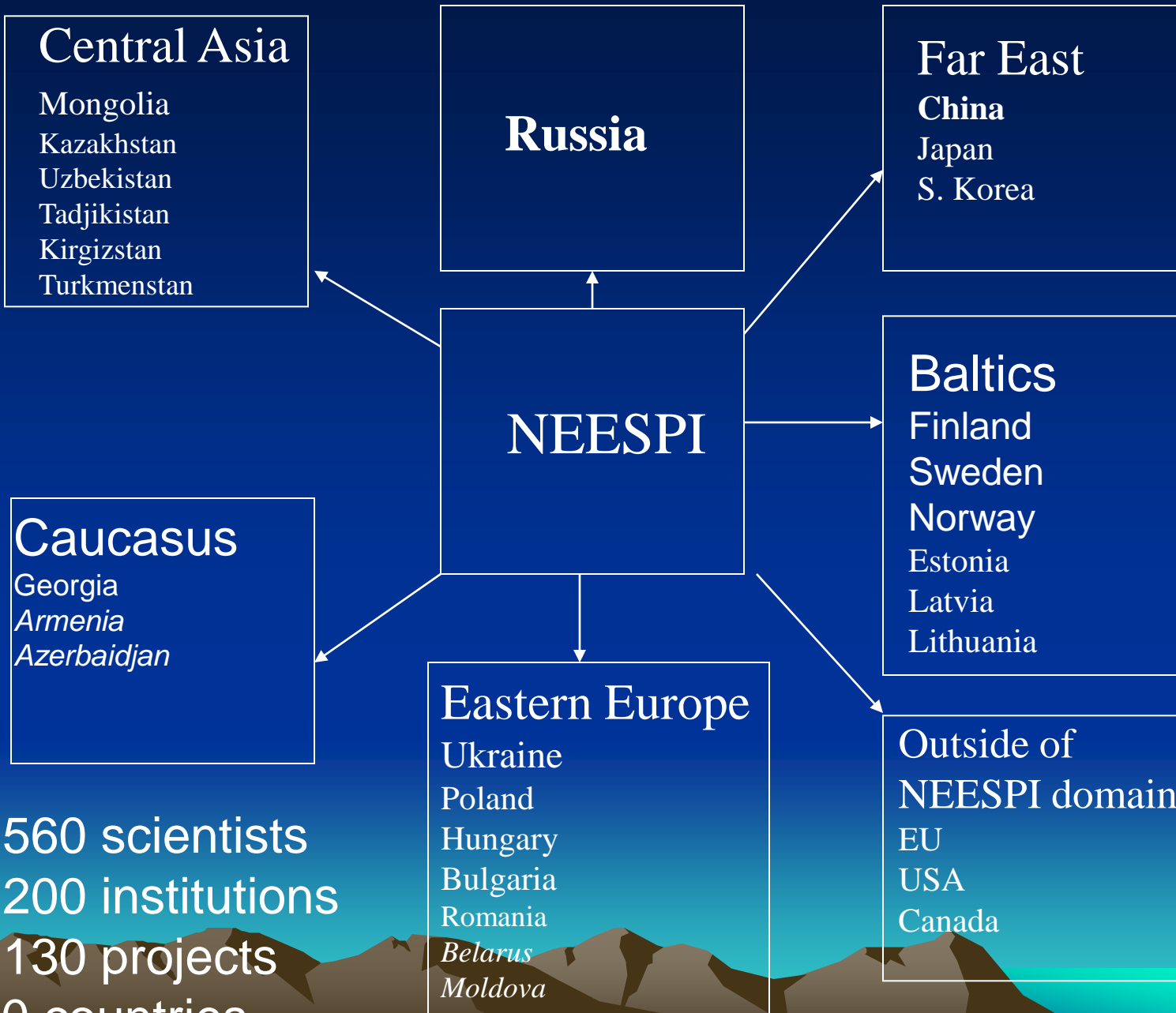
NEESPI Update

- The founder of the program Don Deering passed away
- A book on Siberia under preparation, will be dedicated to him
- The “Arctic LCLUC” book is in press!
- Several special NEESPI peer-review journal issues
- 15 new LCLUC projects
- Expect NEESPI Synthesis proposals this year
- Project office in Helsinki was agreed on but did not open; looking for alternatives



Don Deering

MARCH 28, 1948-FEB. 15, 2010

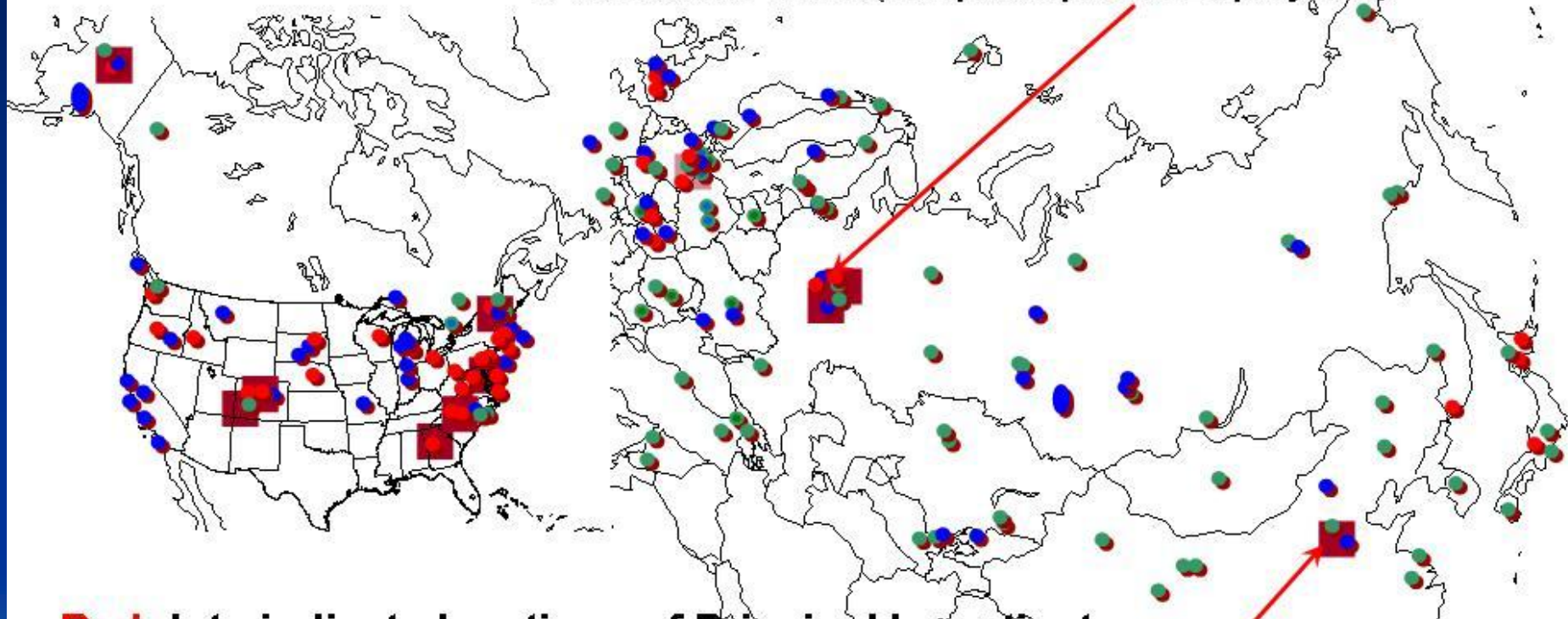


~560 scientists
~200 institutions
~130 projects
30 countries

NEESPI Scientific Network

(On April 6, 2006: 353 scientists from 186 institutions; 52 projects)

19 institutions in Moscow participate in 26 projects



Red dots indicate locations of Principal Investigators

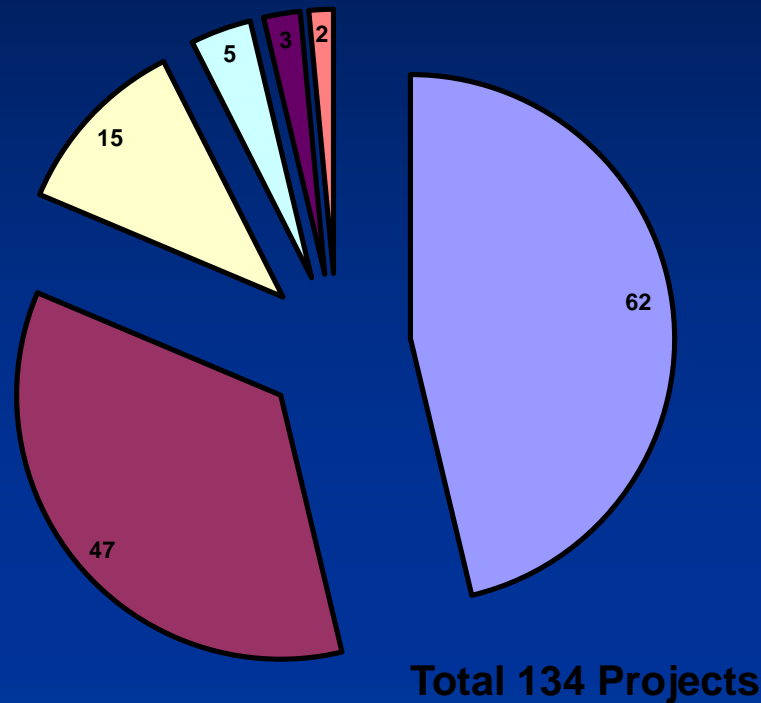
Blue dots – locations of Co-Investigators, and

Green dots - locations of Collaborators.

Squares show Focus Research and Science Support Centers.

6 institutions in Beijing participate in 5 projects

NEESPI Projects by Countries



■ All US Agencies

■ All EU Agencies

■ All Chinese Agencies

■ All Russian Agencies

■ All Japanese Agencies

■ Canada

Partnerships

Links to Global
ESSP Projects
(IGBP, IHDP, WCRP)



Education Component in NEESPI

- Most NEESPI projects include earlier career scientists
- A structure for NEESPI-Education is being established (Georgia Tech., U.Michigan, Moscow AEROCOSMOS, Tomsk CERT)
- NEESPI Early Career Scientist Conference in plans
- Several summer schools
- Training sessions
- Post-doc exchanges
- GLOBE – for bringing kids into science





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НЕ СПИ

NEESPI